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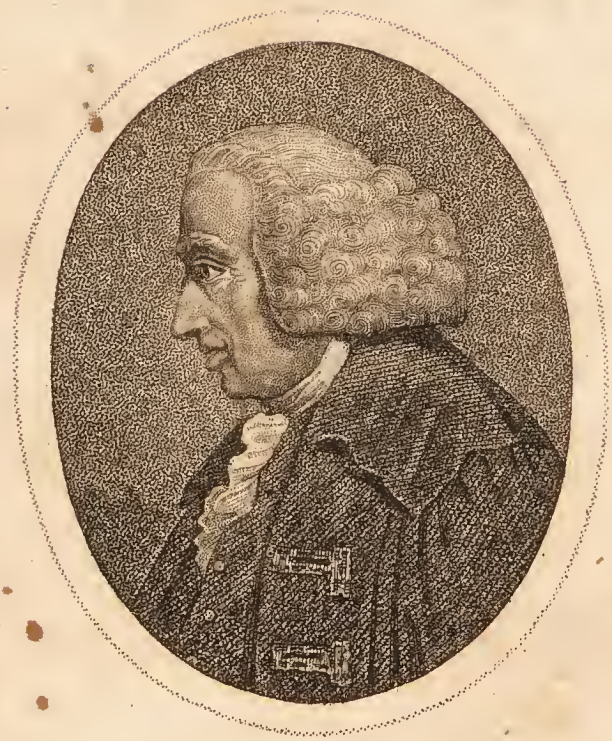
A XXXIII. 9

The pound } contains { twelve ounces
The ounce } contains { eight Drams
The Dram } contains { three scruples
The scruple } contains { twenty grains

a gallon is a measure which
contains eight pounds. (or pints)

The pound or pint } contains { sixteen ounces
The ounce —— } contains { eight Drams

℥ o, ½ a scruple — equal to Grains
℈ i — a — ℈. — " — 20 — ℈
℥ ß — a — ℈. ℈ ½ — " — 30 — ℈
℥ j — 2 — ℈ — " 40 — ℈
℥ j — 3 — ℈. — " 1 Dram
℥ j — 6 — ℈. — " 2 Drams
℥ — [illegible] — " 8 drams



WILLIAM CULLEN, M.D.

late Professor of Medicine

at Edinburgh.

London Published March 20th 1815. by E. Cox & Son, St. Thomas's St. Boro'.

DOCTOR CULLEN'S

Practice of Physic,

IN

INFLAMMATORY, PUTRID, AND INTERMITTENT FEVERS; THE PLAGUE; ST. ANTHONY'S FIRE; SMALL-POX; CHICKEN-POX; MEASLES; PUTRID SORE-THROAT; SCARLET-FEVER; THE MUMPS; CHICKEN-POX; PUERPERAL FEVER; DYSENTERY; HOOPING-COUGH; CROUP; HYDROPHOBIA; RING-WORM; EGYPTIAN OPHTHALMIA; PSORA; INFLAMMATIONS; PHRENSY; APOPLEXY; MANIA; INFLAMMATION OF THE LUNGS; PLEURISY; CATARRH; HÆMORRHAGE; PULMONARY CONSUMPTION; QUINSY; INFLAMMATIONS OF THE HEART, STOMACH, AND INTESTINES; ILIAC PASSION; INFLAMMATIONS OF THE LIVER; KIDNEY; RHEUMATISM; AND DISEASES OF THE EAR AND EYE.

WITH NOTES,

EXPLANATORY AND PRACTICAL.

TO WHICH ARE ADDED,

THE DISCOVERIES MADE IN PHYSIC

Since the Time of Dr. Cullen;

BY

SIR JOHN PRINGLE; SIR WILLIAM FORDYCE; HOME; ARCHER; FOTHERGILL; HEBERDEN; HAMILTON; CURRIE; TROTTER; FOWLER; CHISHOLM; GEACH; REYNOLDS; JENNER; TOWNSEND; BEDDOES; DARWIN; RUSH; SAUNDERS; THORNTON,

&c. &c.

Including also,

The Laws of the Animal Economy,

AND

DOCTRINES OF PNEUMATIC MEDICINE.

BY

ROBERT JOHN THORNTON, M. D.

MEMBER OF THE UNIVERSITY OF CAMBRIDGE, AND OF THE ROYAL COLLEGE OF PHYSICIANS, LONDON; AUTHOR OF THE PHILOSOPHY OF MEDICINE, A FAMILY HERBAL; AND A TRANSLATION OF THE NEW LONDON PHARMACOPŒIA.

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TO

HIS ROYAL HIGHNESS

THE PRINCE REGENT.

With Permission.

Jan. 1, 1816,
New Broad Street.

SIRE!

IT is agreed by all political writers, that a nation's strength and riches consist in its *population*. From the great encouragement given by your Royal Highness to agriculture, and the knowledge diffused from the Board of Agriculture, under the superintendence of that great patriot, Sir John Sinclair, millions of acres of waste land have been brought into the highest state of culture, and, under the *paternal government* of your Royal Highness, England can still boast, notwithstanding a long and most destructive war, of having, from this circumstance, greatly increased her *population*. The remainder of her waste lands should be brought into tillage by *bounties* from Parliament, under the *sanction* of your Royal Highness; a million of industrious subjects would then be added

to the present stock;* and then ENGLAND would have nothing to fear hereafter from hostile invasion, but, on the contrary, have every thing to hope for from the constant activity of her people. But, whilst your Royal Highness weighs these important things in the right balance of reason, there is another cause of destruction to the lives of your Royal Highness's people, *greater* than the sword, *Pestilence* stalks over the land unseen, and assumes her hundred disguises.

Mille janua mortis!

And this Work, intended as a stay from so great a calamity, is one, I am proud to say, not thought unworthy of the countenance of your Royal Highness.

After more than half a century of extensive practice, the illustrious Doctor CULLEN,† obliged

---

* The population in a great measure depends upon the quantity of food produced in any country.

† DR. WILLIAM CULLEN was born Dec. 11, 1712. His father was chief magistrate of the town of HAMILTON. He was first patronised by ARCHIBALD, Duke of Argyle, by whose influence he obtained the chair, as Lecturer on *Chemistry*, at GLASGOW, in 1746, and was afterwards appointed *King's Professor of Medicine* in 1751. He was *invited* to EDINBURGH, as *Chemical Professor* in 1756. The *magistrates of that*

the world with the result of his vast experience, in a work, which he entitled The PRACTICE OF PHYSIC, and this eminent physician gave this knowledge in an English dress, so that the science of medicine might be open not only to the learned, but the public at large; yet, as might be expected, issuing from the academic chair, it was delivered with oracular conciseness, ill-suited even to students of medicine, and more so, to the generality of readers; hence I have omitted whatever I thought superfluous, and have endeavoured to divide and illustrate the Text, with the addition of Notes, so as to render the learned writings of this most eminent practitioner level to almost every capacity; and as the science of medicine has greatly advanced since that period, I have added most, if

---

city presented him with the Professorship of the *Materia Medica* in 1763, on which subject he also lectured. In 1765, the same *magistrates* appointed him to the Professorship of the *Theory and Practice of Physic*, and he began his Lectures on Medicine in 1766, which he continued till the year of his death in December, 1790, four-and-thirty years! His famous work, entitled, "*Practice of Physic*," was published when in the prime of life, and corrected only a few months before his death; he was then aged 77. He was buried at the public expence, and with the highest funeral honours.

not all, the Discoveries made since the time of that great physician, proceeding from the most eminent of the faculty, and thus, by adding the conjoint exertions of the first medical characters in all quarters of the world, the progress of this science will be seen, and a stop, it is hoped, be put to the great mortality occasioned by disease, or the want of weapons, or rather the right use of them, to stay the arm of Death, and this science assume that character of *certitude* which was in vain looked for in *former periods,* and the *new discoveries* grafted on the *old stock,* be made to produce not only beautiful leaves and flowers, but fruit—proceeding from the "*tree of knowledge*"—which may be here called "*the tree of life;*" such are the blessings bestowed upon science, and such the state of medicine in that period of our history, when we can boast of having a PRINCE for our Ruler, the FRIEND AND PATRON OF SCIENCE.

With the utmost deference, I have the honour to sign myself,

SIRE!

Your Royal Highness's

Obliged, devoted Servant,

ROBERT JOHN THORNTON, M.D.

Member of the Royal London College of Physicians.

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FEVERS

AND

CONTAGIOUS DISEASES.

FEBRES

ET

MORBI CONTAGIOSI.

CULLEN'S

PRACTICE OF PHYSIC,

WITH PRACTICAL NOTES, &c. &c.

THE METHOD OF CURE IN FEVERS.

SECTION I.

THE CURE OF CONTINUED FEVERS.

SYNOCHA, SYNOCHUS, AND TYPHUS.*

PRELIMINARY OBSERVATIONS.

As it must be allowed, that, in every fever which has its full course, *there is an effort of Nature of a salutary tendency*, it might be supposed that the cure of fevers should be left to the operation of Nature, or that our art should be only di-

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* Vide for the definition of these several Fevers, Cullen's Nosology, (page 11,) a *Companion* to this Work, 12mo. Edition, published by Cox, Medical Bookseller, St. Thomas's Street, Borough. The symptoms of diseases are omitted here in general, as these are supposed to be known by the *prior study* of Nosology.

rected to support and regulate these operations, and that we should form our indications accordingly. This plan, however, I cannot adopt, because the operations of nature are *very precarious*, and not so well understood as to enable us to regulate them properly. It appears to me, that trusting to these operations has often given occasion to a negligent and inert practice; and there is reason to believe, that an attention to the operations of Nature may be often superseded by art.*

THREE INDICATIONS OF CURE.

The plan of cure which to me appears the most suitable, is that which is formed upon a *three-fold* consideration.

I. The first, therefore, is, To moderate the violence of reaction.

II. The second is, To remove the causes, or obviate the effects, of debility. And,

III. The third is, To obviate or correct the tendency of the fluids to putrefaction.†

HOW THE FIRST INDICATION IS TO BE PROMOTED.

The *first indication* may be answered, that is, *the violence of reaction may be moderated*,

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* We must not attend in Fevers, according to CULLEN, to the *Vis Medicatrix Naturæ*. Medicine, therefore, becomes an art, and one of the utmost importance to mankind. It is said of HIPPOCRATES, that he looked on, and did nothing.

† The *Ars Medendi* in fevers, consists in these *three heads*, not relying upon the operations of Nature.

1. By *all those means* which *diminish* the *action* of the *heart* and *arteries.*

2. By *those means* which *take off the spasm of the extreme vessels,* which *we suppose* to be the *chief cause* of *violent reaction.**

HOW THE ACTION OF THE HEART AND ARTERIES IS TO BE DIMINISHED.

The action of the heart and arteries may be diminished,

1. By *avoiding* or *moderating* those *irritations,* which, in one degree or other, are almost constantly applied to the body.

2. By the *use* of *certain sedative powers.*

3. By *diminishing* the *tension* and *tone* of the *arterial system.*†

THE ANTIPHLOGISTIC REGIMEN.

The *irritations* almost constantly applied, are,

1. *The impressions made upon our senses.*

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* *Reaction* may be explained thus; a violence is offered to Nature, as the amputation of a limb; *the Fever* induced may be *too violent,* which is the reaction of the frame, and this must be reduced. The same in the Fever *Synocha,* and *Synochus,* and sometimes in the incipient stage of Typhus. We may here remark how admirably Cullen generalizes his thoughts, and then goes on subdividing his subject.

† The reader is thus gradually led on to the subject, from *generals* to the *subdivision* of these, until he descends to *particulars.* Thus he steals upon his hearers by degrees, and forces them, as it were, into knowledge. A clearness this we seldom meet with in other writers.

2. *The exercise of the body and mind.* And

3. *The taking in of aliments.*

The avoiding these as much as possible, or the moderating their force, constitute what is rightly called the ANTIPHLOGISTIC REGIMEN, proper to be employed in almost every continued fever.

The conduct of this regimen is to be directed by the following rules and considerations.

1. *All impressions on the external senses,* as being *stimulant* to the system, and a chief support of its activity, should be avoided as much as possible.

No impression is to be more carefully guarded against than that of external heat ;* while at the same time, *every other means of increasing the heat of the body is to be shunned.*† Both these precautions are to be observed as soon as a *hot stage* is fully formed, and to be attended to during its continuance ; *excepting* in certain cases, where a determination to *sweating*‡ is thought necessary.

2. *All motion of the body is to be as much as possible avoided,* especially that which requires the exercise of its own

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* As keeping the windows closed in summer, or a large fire in winter.

† As being covered with much bedclothes.

‡ As *sweating* carries off the *superabundant heat,* and removes spasm, or dryness of the skin, where this is easily excited, or appears to come on naturally, it must be encouraged. It is then termed a *salutary effort of Nature,* and should be promoted. It is often a dangerous attempt to force it, and the imprudent practice has been the slaughter of thousands. Some precautions on this head will be given as we advance.

muscles; and that posture of the body is to be chosen which employs the fewest muscles, and which keeps none of them long in a state of contraction.*

Speaking, as it accelerates respiration, is *particularly* to be refrained from.†

3. *The exercise of the mind is also a stimulus to the body*; so that all impressions which lead to thought, and those especially which may excite emotion or passion, are to be carefully shunned.‡

With respect to avoiding impressions of all kinds, *an exception* is to be made in the case of a *delirium* coming on, when the presenting of accustomed objects may have the effect of interrupting and diverting the irregular train of ideas then arising in the mind. §

4. *The presence of recent aliment in the stomach* always proves *a stimulus* to the system, and ought therefore to be as *mode-*

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* The horizontal posture in bed, or on a couch, is the proper one.

† This *minutia* is too little attended to. By frequent speaking the mind is exerted, as well as the numerous muscles of the throat, and respiration accelerated.

‡ Company, therefore, is to be prohibited, except that of the nurse, and one or two friends, who are constantly about the patient. In proportion to the danger, friends become solicitous, and there are thousands who are thus killed by the superabundant and ill-timed attention of friends. The room should be kept dark, as much as possible, and the patient should, under such circumstances, be kept as quiet as possible.

§ Sometimes the sick person falls into frightful dreams, or reveries, especially children, and it becomes requisite to let in light, and dissipate the delusion.

rate as possible.* A *total abstinence* for some time may be of service ;† but as *this cannot be long continued* with *safety*, we must *avoid* the *stimulus of aliment*, by *choosing that kind which gives the least.* We suppose that alimentary matters are more *alkalescent ;* and this leads to avoid *all animal*, and to *use vegetable food* only.‡

As our *drinks* also may prove stimulant, so all *aromatic* and *spirituous liquors* are to be *avoided ;* and, in answering the present indication, *all fermented liquors*, excepting those of the *lowest* quality, are to be abstained from.§

OF OTHER STIMULANT POWERS.

Beside these stimulant powers more constantly applied, there are others which, although *occasional* only, yet, as *commonly accompanying fevers*, must be attended to and removed.

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* Given, therefore, in small quantities at a time.

† Observe a dog when sick, how he conceals himself in a corner, avoids all exertions, and at first abstains from food. He eats dog's grass for his physic.

‡ As fruits, if in season, gruel, sago, tapioca, panada, and if not very ill, a light batter-pudding. Nothing to require much mastication.

§ The drinks should be barley water, toast and water, into which put a little currant jelly, or apple drink made by slicing some apple into boiling water, tamarind drink made by putting some tamarinds into boiling water, thin gruel, if other food be rejected, or rennet whey, and sometimes the desire of small beer may be complied with. These should be given warm.

1. One is, the *sense of thirst*, which, as *a powerful stimulus*, ought always, in one way or other, to be removed.*

2. Another *stimulus* frequently arises from *crudities* or *corrupted humours* in the *stomach*; and these are to be removed by *vomiting*,† by dilution,‡ or by the use of acids.§

3. A *third stimulus* often arises from the *preternatural retention* of *fæces* in the *intestines*; and ought to be removed by *frequent laxative glysters*.‖

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* The drinks mentioned in the former note are best adapted for this purpose. Sometimes, however, this is only to be allayed by putting some sliced liquorice root into boiling water, to be given when moderately cool.

† A gentle vomit is the following for a grown person.
℞. Ipecac, gr. 15 or 20. Antim. tart. gr. 2. statim sumend. It will be best not to drink too much gruel, and only before sickness, or when a sense of nausea is felt.

‡ By taking plenty of gruel or barley water.

§ As the juice of oranges, lemon, sugar and water; but saline draughts in the state of effervescence answer best.

‖ Here Cullen most decidedly prefers *glysters* to *purging medicines*. The action even of the most gentle laxatives is always attended with some degree of stimulus, while glysters, especially the mild ones, seldom produce that effect. The best glyster, in these cases, is a pint of gruel, a table-spoonful of olive oil, and a tea-spoonful of brown sugar and salt; or, what is still better, two ounces of manna. Further on he gives us his reasons for preferring *bleeding* to *purging*, as a depletion, and again recommends the use of glysters, which should not be repeated less than once a day; the evening is the best time: but here with all due deference to such authority as Doctor Cullen, a purge, as a neutral salt, we have found to supersede the necessity of bleeding; and where the

4. A *fourth stimulus* to be constantly suspected in fevers, is a *general acrimony of the fluids*, as produced by the increase of motion and heat, *joined with an interruption of the excretions*. This *acrimony* is to be obviated or removed by the taking in of *large quantities* of *mild antiseptic liquors*. *

THE ANTIPHLOGISTIC REGIMEN PROPER IN ALL FEVERS.

The avoiding of irritation in all these particulars, constitutes the ANTIPHLOGISTIC REGIMEN absolutely necessary *for moderating the violence of reaction*; and, if I mistake not, is *proper in almost every circumstance of continued fevers*; because several of those stimulants above mentioned, beside their stimulant powers, have *other qualities* by which they may be *hurtful*.†

SEDATIVE POWERS.

A *second head* of the means *for moderating the violence of reaction*, comprehends certain *sedative powers*, which may be

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disease is likely to prove a *synochus*, this practice should always be had recourse to. Preceded by a pill of calomel, containing three or four grains, it has fully answered our expectation.

* The chief of these are the acid fruits diluted with water; to which we may add the decoction of malt, of radix graminis, (the Triticum repens of Linnæus) infusions of sage, mint, and other plants of that kind called usually *Tea*, but of this great acrimony existing in the frame in inflammatory fevers, we entertain some doubts.

† *Animal food*, in which we must include the *yolk* of eggs, (not the white, which is excellent, beat up with wine in fevers) is apt to turn *putrid*, and becomes then a new *fomes* of putridity.

employed to diminish the activity of the whole body, and particularly that of the sanguiferous system.

THE ADMISSION OF COLD AIR.

1. The *first* of these to be mentioned is the *application of cold.* Heat is the chief support of the activity of the animal system; which is therefore provided in itself with a power of generating heat. But, at the same time, we observe, that this would go to excess, were it not constantly moderated by a cooler temperature in the surrounding atmosphere. When, therefore, that *power of the system generating heat is increased,* as is commonly the case in fevers, it is necessary not only to avoid all means of increasing it further, but it seems proper also to apply *air* of a cooler temperature; or at least to apply it more entirely and freely than in a state of health.

Some late experiments in the *small pox,* and in *continued fevers,* shew that the free admission of *cool air* to the body is *a powerful remedy in moderating the violence of reaction;* but what is the mode of its operation, to what circumstances of fever it is peculiarly adapted, or what limitations it requires, I shall not venture to determine, till more particularly instructed by further experience.*

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* The admission of cool air into the room of a patient labouring under an inflammatory fever, was new to Cullen, but is now much employed in that disease, as well as in putrid fevers. Nothing is more reviving to patients. This ought not to be carried, however, to excess, except in the pure Typhus fever, when the room should be sprinkled with vinegar, by means of an hearth-broom in fine sprays.

THE EMPLOYMENT OF ACIDS.

2. A second *sedative power* which may be employed in fevers, is that of certain medicines, known, in the writings on the *Materia Medica*, under the title of *Refrigerants*.

The chief of these are *acids* of all kinds, when sufficiently diluted; and they are, in several respects, remedies adapted to continued fevers. Those especially in use are, the *Vitriolic* and *Vegetable*; and, on many accounts, we prefer the latter.*

NEUTRAL SALTS.

3. Another set of refrigerants are, the *Neutral Salts*, formed of the *vitriolic*, *nitrous*, or *vegetable acids*; with *alkalines*, either *fixed* or *volatile*. All these neutrals, while they are dissolving in water, generate cold; but as that cold ceases soon after the solution is finished, and as the salts are generally exhibited in a dissolved state, their refrigerant power in the animal body does not at all depend upon their power of generating cold with water. The neutral chiefly employed as a refrigerant is *Nitre*; but all the others, compounded as above-mentioned, partake more or less of the same quality.†

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* The vitriolic acid is seldom employed as a remedy in inflammatory fevers, but the vegetable frequently. Currants are hence found to be excellent, also grapes, when ripe. Thin drinks acidulated with currant-jelly, or tamarinds, or the juice of lemons, or cream of tartar.

† *Nitre* has been long used as a *refrigerant*. In too large quantities, however, it has often disagreed. It may, therefore, be

SUGAR OF LEAD REJECTED.

Beside these neutrals, some metallic salts also have been employed as refrigerants in fevers; and particularly the *Sugar of Lead.* But the refrigerant powers of this are not well ascertained; and its deleterious qualities are too well known to admit of its being freely used.*

LESSENING THE TENSION, OR TONE OF THE SYSTEM.

4. Under the third general head of the means to be employed *for moderating the violence of reaction,* are comprehended the several means of diminishing the tension, tone, and activity, of the sanguiferous system. As the activity of this system depends, in a great measure, upon the *tone,* and this again upon *the tension of the vessels,* given to them *by the quantity of fluids they contain,*† it is evident, that the

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necessary to guard the young practitioner against giving *nitre* in a larger quantity than *two drachms* in the twenty-four hours, nor in doses of above *ten grains*, well diluted with mucilaginous drink. The *aqua ammonia acetata* is often given, and with more advantage in the dose of half an ounce every two or three hours. *Saline draughts* formed by adding together half an ounce of *lemon-juice*, to a cup containing a scruple of *salt of wormwood*, dissolved in two ounces of water, to which a small quantity of white powdered sugar has been added, has done great good, repeated every morning.

* The refrigerant power of *Saccharum Saturni* is extremely doubtful, and Dr. Cullen was two prudent to advise it.

† This is the reasoning of Cullen, and one mode of explanation is good, until a better be formed.

diminution of the quantity of these must diminish the activity of the sanguiferous system.

The quantity of fluids contained in the sanguiferous system, may be diminished most conveniently by the evacuations of blood-letting and purging.

ON BLOOD-LETTING.

1. Nothing is more evident than that *blood-letting* is one of the most powerful means of diminishing the activity of the whole body, especially of the sanguiferous system; and it must therefore be the most effectual means of *moderating the violence of reaction in fevers.* Taking this as a fact, I omit inquiring into *its mode of operation*, and shall only consider *in what circumstances of fevers it may be most properly employed.**

WHEN TO BE EMPLOYED.

When *the violence of reaction*, and *its constant attendant*, a *phlogistic diathesis*, are *sufficiently manifest;* when *these constitute* the *principal part of the disease*, and may be expected to continue throughout the whole of it, as in many cases of synocha; then *blood-letting* is the *principal remedy*, and *may be employed as far as the symptoms of the disease may seem to require*, and the *constitution* of the *patient* will *bear.* It is, however, to be attended to, that *a greater evacuation than is*

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* Cullen judiciously observes, that blood-letting being a decidedly excellent remedy, he will not inquire further into the *modus operandi*; but we know the fact, that it lessens action more than any other remedy.

necessary, may occasion a *slower recovery*, may render the person more liable to *a relapse*, or may *bring on other diseases.**

PROPER CAUTIONS RESPECTING IT.

In the case of violent synocha, therefore, there is little doubt about the propriety of blood-letting; but there are other species of fever, as the synochus, in which *a violent reaction* and *phlogistic diathesis appear*, and *prevail during some part of the course of the disease*; while, at the same time, these circumstances do not constitute the principal part of the disease, nor are to be expected to continue during the whole course of it; and it is well known, that, *in many cases, the state of violent reaction is to be succeeded, sooner or later, by a state of debility*, from the excess of which, the danger of the disease is chiefly to arise. It is therefore necessary, that, in *many cases*, blood-letting should be *avoided*; and *even although, during the inflammatory state of the disease, it may be proper*, it will be *necessary* to *take care* that *the evacuation* be *not so large* as to *increase the state of debility which is to follow*.†

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* Nothing can be better than this caution. Young practitioners fly to *venesection* at once, regardless of the injury they may occasion; and should the disease be *Synocha*, the death of the patient ensues.

† These cautions should be well weighed by each junior practitioner. Where any doubt prevails, it is best to depend upon the depletion from purging, by means of three grains of calomel, worked off with an ounce or so of infusion of senna, which is sure

SEVERAL CONSIDERATIONS NECESSARY.

From all this it must appear, that the employing *blood-letting*, in *certain fevers*, requires *much discernment* and *skill*, and is to be governed by the consideration of the following circumstances:

1. The *nature* of the *prevailing epidemic.**
2. The *nature* of the *remote cause.*†
3. The *season* and *climate* in which the disease *occurs.*‡
4. The *degree* of *phlogistic diathesis present.*§
5. The *period* of the *disease.*‖
6. The *age*, *vigour*, and *plethoric state* of the *patient.*
7. The patient's *former diseases* and *habit* of *blood-letting.*¶
8. The *appearance* of the *blood drawn out.***

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to do no harm, especially in weak constitutions, and in great towns, where the fevers are more generally of the typhoid kind. By the indiscretion of junior practitioners, more have died from the *lancet* than the *lance.*

* Whether it does not partake more of the Synochus than Synocha.

† Whether arising from exposure to some miasma.

‡ In autumn, the diseases are less inflammatory than in the spring season.

§ Known by the fulness of the pulse, redness of the eyes, &c.

‖ Towards the latter stage, the debility is always greatest.

¶ Persons used to *cupping*, bear bleeding best.

** Some practitioners, with much judgment, take away only a little blood at first, and if it cups, like an artichoke bottom, and has a frothy appearance at top, or a buff-coat on the surface, they then proceed on with vigour.

9. The *effects* of the *blood-letting* that *may have been already practised.**

MANNER IN WHICH VENESECTION SHOULD BE PERFORMED.

When, *after* the consideration of these circumstances, *blood-letting is determined to be necessary*, it should be observed, that it is more effectual, *according as the blood is more suddenly drawn off*,† and as *the body* is at the same time more free from all irritation, and consequently *when in a posture* in which the fewest muscles are in action.‡

OF PURGES.

2. Another evacuation whereby the quantity of fluids contained in the body can be considerably diminished, is that of Purging.

THE MODUS OPERANDI EXPLAINED.

If we consider the quantity of fluids constantly present in the cavity of the intestines, and the quantity which may be drawn from the innumerable excretories that open into this cavity, it will be obvious, that a very great evacuation can be made by purging; and, if this be done by a stimulus applied to the intestines, without being at the same time communicated to the rest of the body, it may, by emptying both the cavity of the intestines, and the arteries which fur-

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* Hence the advantage of medical societies, or associations.

† Hence practitioners order the blood to be taken by a large orifice.

‡ The patient should be in bed, or reclined on a sofa.

nish the excretions poured into it, induce a considerable relaxation in the whole system; and, therefore, purging seems to be a remedy suited to moderate the violence of reaction in fevers.

NOT SO POWERFUL A REMEDY AS BLEEDING.

But it is to be observed, that, as the fluid drawn from the excretories opening into the intestines, is not all drawn immediately from the arteries, as a part of it is drawn from the mucous follicles only; and as what is even more immediately drawn from the arteries, is drawn off slowly; so the *evacuation* will not, in proportion to its quantity, occasion such a *sudden depletion* of the *red vessels* as *blood-letting* does; and therefore cannot operate so powerfully in taking off the *phlogistic diathesis* of the system.

GREAT CAUTION REQUIRED.

At the same time, *as this evacuation may induce a considerable degree of debility*; so, in those cases in which a dangerous state of debility is likely to occur, *purging* is to be employed with *a great deal of caution*; and more especially as the *due measure* of *the evacuation* is *more difficult* to be *applied* than in the case of *blood-letting*.*

FURTHER REASONS TO PAUSE ABOUT BLEEDING.

As we shall presently have occasion to observe, that it is

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* Dr. Cullen appears more adverse to bleeding, than most of his brother physicians.

of great importance, in the cure of fevers, to *restore the determination of the blood to the vessels on the surface of the body*; so purging, as in some measure taking off *that determination*, seems to be an evacuation not well adapted to the cure of fevers.*

WHEN PURGING MAY BE EMPLOYED.

If, notwithstanding these doubts, it shall be asserted, that purging, even from the exhibition of purgatives, *has often been useful in fevers*; I would beg leave to maintain, that this has not happened from *a large evacuation*; and, therefore, *not by moderating the violence of reaction*, excepting in the case of *a more purely inflammatory fever*, or of *exanthemata* of an inflammatory nature. *In other cases of fever*, I have seen a *large evacuation* by *purging*, of *mischievous consequence*; and if, upon occasion, a more *moderate evacuation* has appeared to be *useful*, it is apprehended to have been *only by taking off the irritation of retained fæces*, or by *evacuating corrupted humours* which happened to be present in the intestines; for both of which purposes, *frequent laxatives* may be properly employed.†

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* This militating against his *favourite theory* of fever, may account for his great caution as respects *purging*.

† There is always less danger from *purging* than *bleeding*, but mild purgatives answer the intention best. Calomel, in a grain or two, may be premised, or three drachms of vitriolated magnesia (magnesiæ sulphas), or vitriolated kali (potassæ sulphas), in the infusion of Roses, an ounce and a half rendered, if wished, more palatable by a little syrup, may be given every three hours, until it operates, or a few grains of rhubarb may be added.

THE PROXIMATE CAUSE OF FEVER.

Another set of means *for moderating the violence of reaction in fevers*, are those suited *to take off the spasm of the extreme vessels*,* which *we* believe to be the *irritation* that *chiefly supports the reaction.*

Though I have put here this indication *of taking off the spasm of the extreme vessels*, as subordinate to the general indication *of moderating the violence of reaction;* it is, however, to be observed here, that as fever universally consists in an increased action of the heart, either in frequency or in force, which, in either case, is *supported by a spasm of the extreme vessels*, so the indication for removing this is a very general one, and applicable, in almost every circumstance of fever, or at least with a few exceptions to be taken notice of hereafter.

REMEDIES FOR REMOVING THE PROXIMATE CAUSE OF FEVER TWO-FOLD.

For *taking off the spasm of the extreme vessels*, the means to be employed are either *internal* or *external.*

INTERNAL REMEDIES FORM TWO CLASSES.

The *internal* means are,

1. Those *which determine the force of the circulation to the*

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* By spasm of the extreme vessels is meant, that *dryness* and *parched feel of the skin* which accompanies fevers; in common language we say, the pores are shut.

extreme vessels on the surface of the body, and, by restoring the tone and activity of these vessels, overcome the spasm on their extremities.

2. Those medicines *which have the power of taking off spasm in any part of the system*, and which are known under the title of *Antispasmodics*.

REMEDIES BELONGING TO THE FIRST CLASS.

Those remedies which are fit to determine to the surface of the body, are,

1. *Diluents.*
2. *Neutral Salts.*
3. *Sudorifics.*
4. *Emetics.*

DILUENTS.

1. *Water* enters, in a large proportion, into the composition of all the animal fluids, and a large quantity of it is always diffused through the whole of the common mass. Indeed, in a sound state, the fluidity of the whole mass depends upon the quantity of water present in it. *Water*, therefore, is the proper *diluent* of our mass of blood; and other fluids are diluent only in proportion to the quantity of water they contain.

Water may be said to be the vehicle of the several matters which ought to be excerned; and in a healthy state the fulness of the extreme vessels, and the quantity of excretions, are nearly in proportion to the quantity of water present in the body. In fever, however, although the excretions are

in some measure interrupted, they continue in such quantity as to exhale the more fluid parts of the blood; and while a portion of them is at the same time necessarily retained in the larger vessels, the smaller and the extreme vessels, both from the deficiency of fluid, and their own contracted state, are less filled, and therefore allowed to remain in that condition.

To remedy this contracted state, nothing is more necessary than a large supply of water, or watery fluids, taken in by drinking or otherwise; for as any superfluous quantity of water is forced off by the several excretories, such a force applied may be a means of *dilating the extreme vessels*, and of overcoming the spasm affecting their extremities.

Accordingly the throwing in of a large quantity of watery fluids has been, at all times, a remedy much employed in fevers; and in no instance more remarkably, than by the Spanish and Italian physicians, in the use of what they call the Diæta aquea.

This practice consists in taking away every other kind of aliment and drink, and in giving in divided potions every day, for several days together, *six or eight pounds of plain water*, generally *cold*, but sometimes *warm*. All this, however, is to be done only after the disease has continued for some time, and, at least, for a week.*

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* This practice, which occasioned the humorous account in Gil Blas of Dr. SANGRADO, is unknown in this country, but at the same time the intention is answered by our balm and sage teas, barley water, and drinks of that kind, when a less quantity of water is given, still, however, there are instances where persons have in

NEUTRAL SALTS.

2. A *second* means *of determining to the surface of the body*, is by the use of *neutral salts*. These, in a certain dose taken into the stomach, *produce soon after a sense of heat upon the surface of the body;* and, if the body be covered close and kept warm, a *sweat* is readily brought out. The same medicines taken during the *cold stage* of a fever, *very often put an end to the cold stage, and bring on the hot;* and they are also remarkable for stopping the *vomiting* which so frequently attends the *cold stage* of *fevers*. All this shews, that *neutral salts have a power of determining the blood to the surface of the body*, and may therefore be of use *in taking off the spasm which in fevers subsists there*.

CHOICE OF NEUTRALS.

The neutral most commonly employed in fevers, is that formed of an *alkali* with the *native acid of vegetables*:* but *all*

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fever helped *themselves* plentifully to *cold water*, and have fallen into an immediate perspiration, and the fever has been removed. In children there is always great craving after drink, and barley water is given by us as containing also some slight support.

* This forms our common saline draught:

℞. Suc. limon recent. unc. ss.
Potassæ subcarbon scr. 1.
Syr. simp. dr. 1.
Aq. Cinnam. dr. 2.
Aq. Rosæ. dr. 9.
Fr. Haust.

To be taken every three hours.

the other neutrals have *more* or *less* of *the same virtue;* and perhaps some of them, particularly the *ammoniacal salts*, possess it in a *stronger degree.*

As cold water taken into the stomach often shews the same diaphoretic effects with the neutral salts, it is probable that the effect of the latter depends upon their *refrigerant powers* mentioned before.

What is the effect of the neutral salts, given when they are forming, and in a state of effervescence? It is probable that this circumstance may *increase the refrigerant power* of these salts, and may introduce into the body a quantity of *fixed air;* but for these purposes it would seem proper to contrive that *the whole of the effervescence* should take place in the *stomach.**

℞. Liquor. ammon. acetat. dr. 4.
Aq. cinnam. dr. 2.
Aq. Rosæ. dr. 7.
Fr. Haust.
To be taken every three hours.

℞. Ammon. carbonat. gr. 10.
Suc. limon recent. dr. 4.
Syr. simp. dr. 1.
Aq. Rosæ. dr. 7.
Fr. Haust.
To be taken every three hours.

* In the time of Dr. Cullen, this practice was only in its infancy, but is now much used, generally by ordering the draught to be taken in the state of effervescence, when, if taken instantly, much of the fixed air is swallowed along with it. This is also done by separating the alkali from the acid, and then blending the two to-

SUDORIFICS.

A *third* means *of determining to the surface of the body*, and taking off the spasm subsisting there, is by the use of *sudorific medicines*, and of *sweating*.

ARGUMENTS FOR SWEATING.

The *propriety* of *this remedy* has been *much disputed;* and *specious arguments* may be *adduced* both *for* and *against* the practice.

In *favour of the practice*, it may be said,

1. That, *in healthy persons*, in every case of increased action of the heart and arteries, a *sweating* takes place, and is seemingly the means of preventing the bad effects of such increased action.

2. That, *in fevers*, their most usual solution and termination is by *spontaneous sweating*.

3. That, even when *excited by art*, it has been found *manifestly useful*, at *certain periods*, and in *certain species of fever*.

ARGUMENTS AGAINST IT.

Upon the other hand, it may be urged *against the practice of sweating*,

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gether. This is the most agreeable way of taking them: or, they may be swallowed separately, care being taken to dilute the alkali most. A scruple of carbonate of potash requires half an ounce of fresh lemon-juice to saturate it; the acid is in general measured by a common table-spoon.

1. That as *in fevers a spontaneous sweating* does not immediately come on, so there must be *in these some circumstances different from those in the state of health*, and which may therefore render it doubtful whether the sweating can be excited by art.

2. That, in *many cases*, the *practice has been attended with bad consequences.* The *means commonly employed* have a tendency to produce *an inflammatory diathesis;* which, *if not taken off by the sweat following their use must be attended with much danger.** Thus, *sweating*, employed to prevent the accessions of *intermitting fevers*, has often changed them into a *continued form*, which is *always dangerous.*

3. The utility of the practice is further doubtful, because *sweating when it happens, does not always give a final determination*; as must be manifest in the case of *intermittents*, as well as *in many continued fevers*, which are sometimes in the beginning attended with *sweatings* that do not prove *final;* and, *on the contrary, whether spontaneous, or excited by art, seem often to aggravate the disease.*

DOCTOR CULLEN'S OBSERVATIONS AS RESPECTS SWEATING.

From *these considerations*, it is *extremely doubtful* if the practice of *sweating* can be *admitted very generally;* but, at the same time, it is also doubtful, *if the failure of a practice*, or *the mischiefs* said to have arisen from it, *have not been owing* to the *improper conduct* of *the practitioner.*

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* The practice alluded to is that of giving *white-wine whey* to induce perspiration.

With respect to *this last*, it is almost agreed among physicians,

1. That *sweating* has been generally *hurtful* when excited by *stimulant, heating*, and *inflammatory medicines.*

2. That it has been *hurtful* when excited by *much external heat*, and continued with a great increase of the heat of the body.

3. That it is *always hurtful* when *it does not soon relieve*, but rather increases the frequency and hardness of the pulse, the anxiety and difficulty of breathing, the headache, and delirium.

4. That it is *always hurtful* if it be urged when the sweat is *not fluid*, and when it is *partial*, and *on the superior parts of the body only.*

REASON OF THE INJURY FROM SWEATING.

In *these cases*, it is probable, that *either* an inflammatory diathesis is produced, which increases the spasm on the extreme vessels: *or that*, from other causes, the spasm is too much fixed to yield easily to the increased action of the heart and arteries; and, *upon either supposition*, it must be obvious, that urging the sweat, as ready to produce a hurtful determination to some of the internal parts, may be attended with very great danger.*

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* The student is particularly desired to attend to these observations, inducing a proper caution, and practice. It is ignorance under the garb of wisdom, which has filled our church-yards.

HIS OBSERVATIONS AS RESPECTS THE BENEFITS.

Though the doubts started are to be attended to; and although the practices having been found hurtful, are therefore to be rejected; *it still remains true,*

1. That *sweating* has certainly been *often useful* in preventing the accession of fevers, when the times of this have been certainly foreseen, and a proper conduct employed.

2. That, even after fevers have in some measure come on, *sweating*, when properly employed, either at the very beginning of the disease, or during its approach and gradual formation, has often prevented their further progress.

3. That, even after pyrexiæ have continued for some time, *sweating* has been successfully employed in curing them, as particularly in the case of rheumatism.

4. That *certain fevers*, produced by a very *powerful sedative contagion*, have been generally treated, so far as we yet know, *most successfully by sweating.*

RULES FOR CONDUCTING SWEATING.

These instances are in *favour of sweating*, but give *no general rule*; and it must be left to *further experience* to *determine* how far *any general rule can be established* in this matter. In *the mean time*, if the practice of sweating is to be attempted, we can *venture* to *lay down* the *following rules* for the *conduct* of it:

1. That it should be excited *without the use of stimulant inflammatory medicines.*

2. That it should be excited *with as little external heat, and with as little increase of the heat of the body, as possible.*

3. That, when excited, *it should be continued for a due length of time, not less than twelve hours, and sometimes for twenty-four hours;* always, however, providing that it proceeds without increasing the symptoms of the disease.*

4. That for some part of the time, and as long as the person can easily bear, *it should be carried on without admitting of sleep*†.

5. That it should be rendered *universal* over the whole body; and therefore, particularly, *that care be taken to bring the sweating to the lower extremities.*‡

6. That the practice should be rendered safer by *moderate purging*, excited *at the same time.*§

7. *That it should not be suddenly checked by cold any how applied to the body.*‖

METHODS OF INDUCING SWEATING.

When attention is to be given to these rules, the sweating may be excited:

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* This must be particularly attended to, as patients are generally very impatient under sweating.

† This should likewise be attended to.

‡ Partial sweats are of no benefit.

§ Not, however, during the sweat, but to take care that the bowels be opened soon after, which may be done by a draught of two drachms of vitriolated kali (potassæ sulphas) in some peppermint and cinnamon water.

‖ Great care then should be taken not to open the doors or windows.

1. By *warm bathing*,* or a *fomentation of the lower extremities.*†

2. By *frequent draughts* of *tepid liquors*, chiefly *water*, rendered more grateful by the addition of a *light aromatic*, or more powerful by that of a small quantity of *wine.*‡

3. By giving some doses of *neutral salts.*§

4. *Most effectually*, and perhaps *most safely*, by a large dose of an *opiate*, joined with a portion of *neutral salts*, and of *an emetic.*‖

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* Vide what is said of this further on, page 47.

† As pediluvium, a most useful remedy.

‡ The light aromatics here mentioned are sage, mint, balm, *&c.* For the purpose of sweating, white wines answer best, especially the thin French wines; as also Rhenish wines, particularly Hock. They must be taken warm and plentifully diluted. Wine whey is also a very powerful sudorific, as are also wheys made with vinegar, cream of tartar, the juices of acid fruits, or with dulcified spirit of nitre.

§ Neutral salts may be given in the quantity of two scruples or a drachm; but the patient must nevertheless drink large quantities of warm water. The Potassæ Tartras is the neutral most frequently used for producing sweats; its dose is generally a scruple, but it may be increased to two drachms. Vide what was before said at page 21, on Neutral Salts.

‖ This is the discovery of Doctor Dover, a physician, who performed by it the most extraordinary cures, and kept up his reputation for many years; when he died, he left behind him his "*Last Legacy*," in which he disclosed the source of his fame, which was by means of *powders*, which long went by the name of *Dover's Powder*, now called in the London and Edinburgh Pharmacopœias, *Pulvis ipecacuanhæ compositus.* It consists of eight parts of *neutral salt*, one of *opium*, and one of *ipecacuanha*: so that ten grains

In what cases may *cold water*, thrown into the stomach in large quantities, be employed to excite sweating? See Celsus, Lib. III. chap. vii.—ix.*

4. The fourth means *of determining to the surface of the body*, and thereby *taking off the spasm affecting the extreme vessels*, is by the use of *emetics*.

EMETICS.

Emetics, and particularly *antimonial emetics*, have been employed in the cure of fevers ever since the introduction of chemical medicines: but, for a long time they were employed by chemists and chemical practitioners only; and although of late the use of them has become very general,

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of it are an ordinary dose: But it has been given to the quantity of a scruple without any bad consequences, and that dose repeated every two or three hours till the effect was produced. In general, however, doses of from three to five grains, are the most usual, and are found by experience to be the best. The *Dover's Powder*, when given in larger quantities, often nauseates, and is rejected by vomiting. In administering this powder it may be necessary to observe, that the patient ought to refrain from drinking for at least an hour after taking it, because it nauseates more readily if much diluted in the stomach; and if the nausea be so great as to produce vomiting, its effects as a sudorific are considerably diminished. When however, a sweat is produced, thin diluting drinks may, and ought to be plentifully given; for, in such cases, it is evident from the effect, that the medicine has passed out of the stomach, and that no material nausea can then be produced by it.

* This Sangrado practice is unknown in this country.

their efficacy is still disputed, and their manner of operating is not commonly explained.

THE MODUS OPERANDI EXPLAINED.

Vomiting is in many respects useful in fevers; *as it* evacuates the contents of the stomach; *as it* emulges the biliary and pancreatic ducts; *as it* evacuates the contents of the duodenum, and perhaps also of a larger portion of the intestines; *as it* agitates the whole of the abdominal viscera, promotes the circulation in them, and promotes their several secretions; and lastly, by agitating also the viscera of the thorax, it has like effects there. All these several effects are in many cases and circumstances of fever, procured with advantage; but do not properly fall under our view here, where we are to consider only the effect of vomiting in determining to the surface of the body.

WHY PARTICULARLY SERVICEABLE IN FEVERS.

This effect we do not impute to the *exercise* of vomiting in agitating the whole frame; *but to the particular operation of emetics upon the muscular fibres of the stomach*, whereby they excite *the action of the extreme arteries on the surface of the body*, so as thereby effectually to determine the blood into these vessels, remove the atony, and *take off the spasm affecting them.*

That such is the power of emetics, will appear from the several considerations mentioned above; and therefore, that they are remedies well suited to the cure of fevers.

TWO-FOLD MODE OF OPERATION.

Emetics, for that purpose, are administered in two different ways: That is, either *in such doses as may excite full and repeated vomitings*; or *in such doses as may excite sickness and nausea only, with little or no vomiting at all.*

FULL VOMITING PREFERRED.

Full vomiting is best suited to the several purposes mentioned; and is also well suited *to determine to the surface of the body*, so as thereby *to obviate the atony and spasm which lay the foundation of fever.*—Thus vomiting, excited a little before the expected accession of the paroxysm of an *intermittent*, has been found to *prevent* the paroxysm altogether. And it has been observed also, that, when contagion has been applied to a person, and first discovers its operation, a vomit given will *prevent* the fever which was otherwise to have been expected.*

ADVANTAGES OFTEN DERIVED FROM VOMITING.

These advantages are to be obtained by exciting vomiting

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* R. Pulv. Ipecac. scr. 1.
Antim. tart. gr. 2.
Syr. simp. dr. 1.
Aq. font. unc. 2.
Fr. Haust.

This is an excellent emetic to be assisted by drinking thin gruel, but not in very large quantities, as is too often done. It is well to take a cupful only before the sickness comes on.

at the *first approach* of fevers, or of the paroxysms of fevers; and *after fevers are formed*, vomiting may also be employed to take off, perhaps entirely, the atony and spasm, or at least to moderate these, so that the fever may proceed more gently and safely.

CAUTION HOWEVER IS REQUIRED.

It is seldom, however, that vomiting is found to produce a final solution of fevers; and, after they are once formed, it is commonly necessary *to repeat the vomiting several times*; but this is attended with inconvenience, and sometimes with disadvantage. The operation of full vomiting commonly soon ceases, and the exercise of vomiting is often a *debilitating power*; and therefore, *when the vomiting does not remove the atony and spasm very entirely, it may give occasion to their recurring with greater force.*

NAUSEA INTRODUCED IN LIEU OF REPEATED VOMITS.

For these reasons, *after fevers are fully formed*, physicians have thought proper to employ emetics in *nauseating doses* only. These are capable *of exciting the action of the extreme vessels*, and their operation is more *permanent*. At the same time they often show their power by exciting some degree of *sweat*, and their operation is rendered *more safe*, by their commonly producing *some evacuation by stool.*

THREE CONSIDERATIONS REQUIRED.

Such are the *advantages* to be procured by *nauseating doses* of *emetics*; and it only remains to mention,

1. *What are the medicines* most fit to be employed in that manner.

2. *What are the most proper times* for exhibiting, and
3. *What is the best manner* of administering them.

TWO SORTS OF EMETICS.

1. The emetics at present chiefly in use, are *Ipecacuanha* and *Antimony*.

OBJECTION AGAINST IPECACUANHA.

The *former* may be employed for every purpose of emetics. It may likewise be employed, either in larger or smaller doses, for determining to the surface of the body: but, even in very small doses, it so readily excites vomiting as to be with difficulty employed for the purpose of nauseating only; and however employed, there is reason to believe, that its effects are less permanent, and less powerfully communicated from the stomach to the rest of the system, than those of *Antimony*.

PREPARATIONS OF ANTIMONY TWO-FOLD.

This, therefore, is generally preferred; and its preparations seemingly various, may all be referred to two heads: The *one* comprehending those in which the reguline part is in a condition to be acted upon by acids; and therefore on meeting *with acids in the stomach* becomes active: And the other comprehending those preparations in which the reguline part is *already joined with an acid*, rendering it active.

THE ANTIMONIUM TARTARIZATUM (EMETIC TARTAR) PREFERRED.

Of each kind there are great numbers, but not differing essentially from one another. It will be enough for us to

compare the *Calx Antimonii Nitrata* of the Edinburgh dispensatory, with the *Emetic Tartar* (*Antimonium Tartarizatum*) of the same. The *former*, as I judge, is nearly the same with what is called *James's Powder*.* Which of these is best suited

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* Dr. Monro, brother to the professor, took the pains to examine the records of the Court of Chancery, where the preparation is given, the patentee being first sworn in the most solemn manner, that this is the true and only genuine receipt for preparing it.

RECEIPT.

"Take antimony, calcine it with a continued protracted heat, in a flat, unglazed, earthen vessel, adding to it, from time to time, a sufficient quantity of any animal oil and salt, well dephlegmated; then boil it in melted nitre, for a considerable time, and separate the powder from the nitre, by dissolving it in water."

When the Doctor first administered his powder, he used to join one grain of the following mercurial preparation to thirty grains of his antimonial powder; but in the latter part of his life he often declared, that he had long laid aside the addition of the mercurial. His mercurial, which he called a pill, appears, by the Records of Chancery, to have been made in the following manner:

SECOND RECEIPT.

"Purify quicksilver, by distilling it nine times from an amalgam, made with martial regulus of antimony, and a proportional quantity of sal ammoniac; dissolve this purified quicksilver in spirit of nitre, evaporate to dryness, calcine the powder till it becomes of a gold colour; burn spirits of wine upon it, and keep it for use.

"Signed and sworn by me,

"ROBERT JAMES."

to the cure of fevers, as above explained, seems doubtful; but it appears to me, that although the *former* may have *some*

Respecting the administration of this powder, **Dr. James** gives the following directions:

DIRECTIONS.

If the patient be of a strong constitution, young, and full of blood, it is prudent to take away ten or twelve ounces; though this is not always absolutely necessary, except in the beginning of a fever; for at the latter end of a fever, when the patient is very weak and exhausted, bleeding may be prejudicial. If the patient is costive give a clyster, either of milk and brown sugar, or of warm water, with a large spoonful of salt; or a stool may be procured by two drachms or more of lenitive electuary, half or three quarters of an ounce of purging salt, or from ten to twenty grains of rhubarb. But it is not meant here, that the patient should be purged much, but only that costiveness should be prevented. This part of the directions ought equally to be regarded in the treatment of every acute distemper, when any kind of evacuations are intended to be procured, not only by the powder, but by any other medicine whatever. The greatest of the modern practical authors assert, that a neglect of bleeding before a vomit, or a purge, has sent great numbers to the grave. This caution is of the more importance, when either this medicine, or any other is taken, because many apothecaries, and lower practitioners in physic, frequently vomit or purge, or both, without previous bleeding; alleging for a reason, that the pulse is very low. But in this state the lowness of the pulse is a cause for bleeding, not against it, for reasons very obvious to physicians who understand their business.

There are two papers of powder sealed up in each packet, containing about twenty grains each.—Let the patient take, in bed, half or a third of one of these papers, mixed in a spoonful of panada, any syrup, jelly of currants, barley-water, gruel, or any sort

advantages from its slower operation, and may thereby seem to be more certainly sudorific and purgative, *yet the uncer-*

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of tea; taking care that none of the powder is left in the spoon: or rather, let it be made into a bolus with conserve of orange-peel, or almost any other conserve, or jelly. Let the patient be kept warm during the operation, and drink now and then, at pleasure, a bason of any thin, diluting liquor, warm; as gruel, barley-water, common milk whey without wine, or baum-tea. If it is attended with any sensible operation, as sickness, purging, or sweating, it is not necessary to repeat it till the operation is entirely over; and then another half paper, or a third, is to be given in the same manner as the first. By the time that the operation of the second dose is finished, the feverish heat, head-ache, thirst, dryness of the tongue, and anxiety, generally disappear, and the patient sleeps easily. In this case it is not in the least necessary to take any thing more, for without it the patient will hourly gather strength and recover.

But if any part of the fever remains, a third dose should be given, as soon as the operation of the second is over; and the same quantity (that is, a third, or half a paper) is to be repeated in the same manner, till the fever is quite cured.

But if it happens that the first dose has no sensible operation, a second should be repeated two hours after the first; and if the second has no sensible operation, in six hours, two-thirds, or a whole paper, should be given, and repeated every six or eight hours, till it operates either by purging, sweating, or vomiting, or the fever is cured; which often happens without any operation at all. But the best general and plain direction is, to repeat half, or a third of a paper, once in six hours, till the disorder is removed.

A child of two or three years old may take three or four grains, or something less than a quarter of one of these papers of powder;

tainty of its dose renders it inconvenient, has often given occasion to the timid to be disappointed, and to the bold to do mischief.

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a child of eight or nine, one-third, or more, if necessary; and one of fourteen or fifteen, the same quantity as a grown person.

If it purges, all possible care should be taken to avoid cold, and for this reason it is necessary to use a bed-pan. The distemper itself requires all these cautions, though neither this nor any other medicine had been taken. But they are more to be regarded when any medicine is taken that is expected to excite a sweat. And it must be remarked, that it is by no means intended that a patient who takes this medicine should be kept very hot by fires, bed-clothes, or any other means. It is sufficient that he is a little more defended from the air, and kept a very little warmer than in a state of health.

It sometimes happens, when little or no putrid bile is contained in the stomach, bowels, &c. that the powder, though given in the largest doses, will have no sensible operation of any kind whatever. In these cases, half or a whole paper should be repeated every four or six hours. But on these occasions it will be proper to procure two stools in twenty-four hours, either by a clyster, which is the most easy way, or by giving with every dose of powder, from five to ten grains of rhubarb, omitting it when the purpose is answered, and resuming it when it again becomes necessary. It is not to be concluded, that because this medicine produces no operation, either by vomiting, purging, or sweating, that it is in such case of no efficacy, much less that it can be prejudicial, by being retained in the body; for there are other discharges by which a crisis is often made, and the distemper cured, as by urine and insensible perspiration*. And there is great reason to believe it frequently acts so as to extinguish a fever, by a

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* See VINDICATION of the fever powder by Dr. James.

On the other hand, the dose of the *Emetic Tartar* can be exactly ascertained; and I think it may be exhibited in such a manner as to produce all the advantages of the other.

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specific quality, discoverable only by experience, and which, perhaps, no one as yet is sufficiently acquainted with.

The head in fevers is often very much affected, and the patient is light-headed, insensible, or convulsed: these symptoms the powder generally removes in a little time; but as they are very troublesome and dangerous, it would be prudent to apply stimulating cataplasms all over the feet, in case they are not removed by the first or second dose, and let them be renewed every six or eight hours, till the senses return, and the head is relieved.

The cataplasms are thus made: Take equal parts of mustard-seed bruised, and horse-radish scraped, a little old yeast or barm, and as much of the sharpest vinegar as is sufficient to make a cataplasm; but at sea, where horse-radish and old yeast cannot be had, a cataplasm may be made with pickled herring, beat up with vinegar and fresh mustard.

But it sometimes happens, that after a fever is subdued, the patient will be low-spirited and dejected, and labour under a kind of languor for some days. In such a case I do not think it at all necessary to repeat this medicine, or give any other whatever. But if the heat is moderated, the tongue much cleared, and not too quick; if the urine deposits an equal sediment, and the patient begins to sleep, I esteem nothing but a little care requisite for his absolute recovery; unless in case of costiveness, where it may be prudent to give a stool or two by half an ounce of Glauber's salt, or manna, or any other gentle cathartic.

In this general direction there is no mention made of bark; although Dr. James, throughout his account and defence of his powder, extols the use of bark, after their operation, to prevent a return of fever, and to give tone. Among several, we will select the following cure as published by him:

THE TIME OF EXHIBITING IT.

Whichsoever of these preparations be employed, I judge *the most proper time for exhibiting them*, to be *the time of acces-*

Robert Kay was taken ill of a fever on Saturday, July 9, 1774. On Sunday evening he went to bed without any violent symptoms; but in the night he was seized with a delirium, insomuch that very early on Monday morning he came down stairs naked, and behaved in every respect like a person light-headed. All Monday and Tuesday the delirium continued in such a manner, that he was very outrageous; and it was with great difficulty that two or more persons, whom his master placed about him, could keep him in bed.

Tuesday morning, July 12, he took a dose of seven grains of Dr. James's fever powder, which was repeated three times during the same night. It operated principally by sweat, yet gave him four or five motions.

Wednesday morning, July 13, he was better, though not entirely free from delirium: it was, however, thought proper to give him the *bark*. This morning he had two hours sleep, which he had not had for three days before. In the evening, about seven, the violence of the delirium returned. He immediately took ten grains of the fever powder, and repeated it in six hours. He had three or four hours sleep in the night, and was quiet.

Thursday, July 14, his delirium left him. The bark, however, was still continued, and he had no signs of fever the whole day. He passed the night with great ease and much sleep, and has been ever since perfectly well.

The observation which Dr. James makes on the following cure is: "The above is very worthy the attention of the public, as it is an instance of the great efficacy of the *fever powder* and the *bark*, when mutually employed to assist each other. It is a remarkable property of the powder, that in the very worst cases, if it does not effect a cure itself, it generally brings on a remission, so as to give an opening for the *bark*; and by continuing this during the

sions; or *a little before*, when that can be certainly known. In continued fevers, the exacerbations are not always very

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remission, the former during the fit, the most dangerous and difficult fevers will be generally subdued in a very short time."

Besides an order from government for the army and navy being supplied with this powder, and the reports being favourable in the hands of practitioners, we shall subjoin a letter, which was published, from the Rev. Mr. Burton of Eldon, to Dr. James.

SIR,

"I have already administered above thirty dozen of powders, "and they have *never failed*, under the blessing of God, in any "*one* instance. They have done many surprising cures; and I "cannot omit the following instance of the safety, as well as the "excellency of them. A man was seized with a fever in my "parish, the apparent wretchedness of whose circumstances "equalled the misery of his disorder, for he was surrounded by a "wife and seven children, who entirely depended on his labour "for support, and who, in a fit of despair, had just performed, as "they supposed, the last friendly act, by laying him on his side in "order to die easy. In this situation, I gave him seven grains of "your powder, which, by a few repetitions of that quantity, in "some days perfectly restored him to health. He is now alive, "and as hearty as ever. Many instances I have met with, where-"in the powders *have operated much*, but removed the cause; "many again in which they have been attended with *no sensible* "*operation, yet perfected the cure.*

"It is no inconsiderable proof of the goodness of a medicine, "when the gentlemen of the faculty (however they publicly decry "it) make use of it under a disguise themselves; and of the cer-"tainty of this I have been a witness.

"As I have, from an experimental knowledge of the powders, "the success of them at heart, as a friend to mankind in general, "and to my country in particular, I should, with great concern, "hear that the world was, by any sinister means, deprived of so

observable; but there is reason to think, that one commonly happens *about noon*, or *soon after it*, and *another* in *the evening*, and that *these*, therefore, *are the most proper times for exhibiting the antimony.*

MODE OF EXHIBITION.

3. *With respect to the manner of administration*, that of the *Calx Nitrata*, (Pulvis antimonialis, now called) is simple, as the whole of what is judged a proper dose is given *at once*, and no more can properly be given till the time of the next accession.*

The administration of the *Emetic Tartar*, (antimonium tartarizatum) is different. It is to be given *in small doses*, not *sufficient* to excite *vomiting*; and *these doses*, after *short intervals*, are to be *repeated* for *several times*, till *sickness*, *nausea*,

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" valuable a medicine; and therefore I send you this to be made " use of as you think proper.

" I am, Sir,

" Your sincere friend and humble servant,

" GEORGE BURTON."

The *Pulvis Antimonialis* of the London Pharmacopœia, is intended as a substitute for Dr. James's Powder.

* The dose is ten or twelve grains. This calx, however, is very uncertain in its operations, sometimes acting with great violence, and sometimes scarcely producing any perceptible effects.

*and some, but not much, vomiting, come on.** The difference of this administration must depend upon the dose, and the length of the intervals at which it is given. If it be intended that the medicine should certainly operate by *stool,* the doses are *made small,* and the *intervals long.*† On the contrary,

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* R. Antim. tart. gr. ss.
Aq. Menth. pip. unc. 1 ss.
Syr. tolut. dr. 4.
Ft. Haust.
To be given every two hours.

R. Antim. tart. gr. 1.
Camphor, gr. 5.
Cons. Rosæ, gr. 1.
Ft. Bolus.
To be given every four hours. This is supposed more gradually to dissolve in the stomach. If the antimonial vomits, give plenty of gruel; if it purges no harm is done, and when a sweat is once excited, the room is to be kept rather warm, and the following medicine given every three hours.

R. Potassæ subcarbon. scr. 1.
Suc. limon recent. dr. 4.
Aq. ros. unc. 1 ss.
Aq. Cinnam. dr. 2.
Spir. Æther. nitric.
Syr. Croci. āā dr. 1.
Ft. Haust.

Where vomiting is required, it is best to have recourse to one, as before mentioned, p. 31.

† Thus, after vomiting, it would be prudent to give the antimonial draught at the interval of three or four hours, especially where the stomach is naturally extremely irritable.

when *vomiting* is proper, or when *much purging* ought to be *avoided*, and therefore some *vomiting* must be admitted, the doses are made *larger* and the *intervals shorter*.*

CAUTIONS AS RESPECT THE REPETITION.

With respect to both kinds of preparations, the *repetition* is to be made *at the times of accession*, but *not very often*: for if the *first exhibitions*, duly managed, have little effect, it is seldom that the after exhibitions have *much*; and it *sometimes happens* that the *repeated vomitings*, and especially *repeated purgings*, do *harm* by *weakening the patient*.

OF ANTISPASMODICS.

The other set of *internal* medicines, which I supppose may be useful *in taking off the spasm of the extreme vessels*, are those named *Antispasmodic*. How many of these may be properly employed, *I am uncertain*; and their mode of operation is *involved in great obscurity*. It is certain, however, that *opium*, *camphor*, *musk*, and perhaps some others, *have been employed in fevers with advantage*; but the *circumstances* in which they are *especially proper* and *safe*, *I find difficult to ascertain*; and

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* For instance, where a diarrhœa exists, or the bowels be extremely weak, and easily acted on, the dose then may be three grains every ten minutes, until vomiting comes on, drinking plentifully of warm thin water gruel. It must be here observed, that acids must be abstained from during the exhibition of antimony, as they often produce considerable gripings.

therefore cannot *venture* here to *lay down any general doctrine concerning them.**

EXTERNAL MEANS TWO-FOLD.

The *external* means suited to take off the spasm of the extreme vessels, are BLISTERING and WARM BATHING.

BLISTERING.

What are the effects of *Blistering*, so frequently employed in fevers, is not yet *agreed* upon among physicians; and many different opinions have been maintained on this subject, drawn not only from *reasoning*, but also from presumed *experience*. I must not, however, enter into *controversy*; but shall deliver *my own opinion* in a few words.

RATIONALE OF THE OPERATION OF BLISTERS.

I am persuaded, that *the small quantity of cantharides* absorbed from a blistering plaster is not *sufficient* to *change the consistence of the mass of blood:* and *therefore* that such a quantity can neither do *good*, by resolving *phlogistic lentor*, if it exists; nor do *harm*, by increasing the dissolution of the blood arising from a putrid tendency in it. *I therefore neglect entirely the effects of cantharides upon the fluids.*

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* This practice must be attended with considerable danger, and could only apply to the advanced stages of fever, or to keep up a critical perspiration already begun.

The *inflammation* produced by the application of cantharides to the skin, affords a certain proof of their *stimulant power:* but, in many persons, the effect of that stimulus is *not considerable;* in many, it is *not communicated to the whole system;* and, *even when the effect does take place in the whole system, it seems to be taken off, very entirely, by the effusion and evacuation of serum from the blistered part.* I conclude, *therefore,* that neither much *good* is to be expected, nor much *harm* to be apprehended, from the *stimulant power of blistering,* and the certainty of this conclusion is established, by the great benefit arising *from* the proper practice of blistering in inflammatory diseases.

Much has been imputed to the *evacuation* occasioned by blistering; but it is never so considerable as to affect the whole system; and therefore can neither, by *sudden depletion* relax the sanguiferous vessels, nor, by *any revulsion,* affect the *general* distribution of the fluids.

The *evacuation,* however, is *so considerable* as *to affect the neighbouring vessels;* and the manifest utility of blistering near the part affected, in inflammatory diseases, leads me to believe, that *blistering,* by *deriving to the skin,* and *producing* an *effusion* there, *relaxes the spasm of the deeper seated vessels.* I apprehend it to be in this manner that the tumour of a joint, from an effusion into the cellular texture under the skin, takes off the *rheumatic* pain affecting the joint.

Analogous to this, it may be held, *that the good effects of blistering in continued fevers, arise from its relaxing the spasm of the extreme vessels, by a communication of the blistered part with the rest of the skin;* and this is illustrated by the effect of blistering in colic and dysentry.

WHEN BLISTERS MAY BE EMPLOYED.

It appears to me, that blistering may be employed *at any period* of continued fevers; but that it will be of *most advantage in the advanced state of such fevers*, when, the reaction being weaker, all ambiguity from the stimulant power of blistering is removed, and when it may best concur with other circumstances tending to a final solution of the spasm.

WHERE THESE SHOULD BE PLACED.

From the view of this matter given before, it will appear, that the part of the body to which blisters ought to be applied, is *indifferent*, excepting upon the suspicion of *topical affection*, when the blistering ought to be made as near as possible to the part affected.*

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* The *Empl. Lyttæ* should have gum edges ordered, and be of a moderate size, and the best way of applying it, is on the chest, near the scrobiculus cordis, to be put on at bed time, at nine or ten o'clock, to be taken quite off at nine the next morning; when the bladders are to be cut, and the blister gently wiped, and again applied, to remain till nine again in the evening, when it is to be drest with spermaceti ointment. If the patient is subject to strangury, he must drink plentifully of barley water, into which, two tea-spoons full of gum-arabic has been dissolved. It will be prudent to commence the purging, or vomiting, before blistering. The next repetition may be on the back, betwixt the shoulders. If exhausted two more must be put on the thighs.

SINAPISMS.

Whether *Sinapisms*, and other *Rubefacients*, act in a manner analogous to what we have supposed of blistering, *may be doubtful;* but their effects in rheumatism, and other inflammatory diseases, render it probable.*

THE WARM BATH.

The other external means of taking off the spasm of the extreme vessels, is *Warm Bathing*. This was frequently, and in various circumstances, employed by the *ancients*; but till *very lately* has been *neglected* by *modern physicians*. As the heat of the *bath stimulates* the extreme vessels, and, with the concurrence of moisture, also *relaxes* them, it seems to be *a safe stimulus*, and well suited *to take off the spasm affecting them*.

FOMENTATIONS RECOMMENDED.

Water may be applied to the whole body by *immersion*; but this is, in many respects, inconvenient; and whether some of the inconveniencies of immersion might not be avoided by

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* The same objection holds here, as to the antispasmodics before treated of. It can only be safely applied, when the powers of life require rousing, or the delirium is very violent. Then flowers of mustard are ordered to be mixed with the linseed meal, moistened with vinegar, and applied to the feet, confined by a towel, for two hours, or until some pain be felt.

a *vapour-bath*, I have not learned from experience.* I know however, from *much experience*, that most of the purposes of *warm-bathing* can be obtained by a *fomentation* of the legs and feet, *if properly administered, and continued for a due length of time, which ought not to be less than an hour.*†

The marks of the good effects of such a fomentation, are, the patient's bearing it easily, its relieving delirium, and inducing sleep.

THE SECOND INDICATION.

Having now considered the several means of satisfying the *first* general indication in the cure of fevers, I proceed to the *second*, which is, to remove the cause or obviate the effects of debility.‡

OF CONTAGION.

Most of the *sedative powers inducing debility*, cease to act soon after they have been first applied; and, therefore, *the*

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* The practice of the warm bath is not now employed, nor have I heard of any case, where the vapour bath has been employed.

† Fomentations are best done, by boiling a handful of chamomile flowers in two quarts of water, and dipping flannels in this, wringing them well out, and applying them very warm to the belly of the patient, often changing them. He should be wrapt in a blanket, which can be readily removed, and afterwards have an hot shirt put on.

‡ This indirectly applies to the very last, or exhausted stage of Synocha to the second stage of Synochus, and to Typhus, at the very onset.

removing them is not an object of our present indication. There is only *one* which may be supposed to continue to act for a long time; and that is *contagion.* But we know *nothing* of the *nature of contagion* that can lead us to any measures for *removing* or *correcting it.** We know only its *effect* as a *sedative power* inducing *debility*, or *as a ferment inducing a tendency to putrefaction in the fluids.* The obviating the latter will be considered under our *third* general indication, and the *former* alone is to be considered here.

DEBILITY ARISES FROM CONTAGION.

The *debility* induced in fevers by *contagion*, or *other causes*, appears especially *in the weaker energy of the brain*; but in what this consists, or how it may be directly restored, we do not well know. As nature, however, does, seemingly for this purpose, *excite the action of the heart and arteries*, we ascribe the continuance of *debility* to *the weaker reaction of the*

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* It has been often observed, that at the outset of an intermittent, or putrid fever, the one probably occasioned by vegetable, the other by animal miasmatas, an emetic has removed the same. It is more than probable then, that the existing cause first attaches itself to the fauces, and hence medical men should avoid the breath of patients, labouring under typhus. If the tongue or throat be examined, the head of the patient should be kept straight, and the physician take only a side view. By such neglect many a valuable life has been lost to themselves, their friends, and the community, as was the case of Doctor Garnet. Fear disposes to take infection. Ventilation dilutes this virus, and renders it less dangerous. Washing the mouth with vinegar and water is also useful; also living well to avoid infection.

sanguiferous system; so that the *means* to be employed for *obviating debility*, are immediately directed *to support and increase the action of the heart and arteries*; and the *remedies* used are called *Tonics* or *Stimulants*.

SHEWN BY DISSECTION ALSO.

In contagious diseases, both from the effects which appear, and from dissections, it is known, *that the tone of the heart and arteries is considerably diminished*; and that *tonic remedies*, therefore, are properly indicated.

TONIC POWERS TWO-FOLD.

These are to be considered as of two kinds; the first being the power of *cold*, the second that of *tonic medicines*.

COLD, ITS TWO-FOLD APPLICATION.

The power of *cold* as a tonic, I have before mentioned; and it is employed, in fevers, in two ways; either as the *cold matter* is thrown into the *stomach*, or as it is *applied* to the *surface of the body*.

RATIONALE OF ITS OPERATION WHEN APPLIED INWARDLY.

As it has been shewn above, that the tonic power of cold can be communicated from any *one part* to *every other part of the system*; so it will readily be allowed, that *the stomach* is a part as fit for *this communication* as *any other*; and that *cold drink*, taken into the *stomach*, may therefore prove an *useful tonic* in fevers.

CAUTION REQUIRED.

This the experience of all ages has confirmed: but, at the same time, it has been frequently observed, that, in certain circumstances, *cold drink*, taken into the stomach, has proved very *hurtful;* and, therefore, that the use of *cold drink*, in fevers requires some *limitations.* What these limitations should be, and what are all the circumstances which may forbid the use of cold drink, is difficult to determine; but it seems clearly forbidden, in all cases where a *phlogistic diathesis* prevails in the system, and more especially when there are *topical affections* of an *inflammatory nature.**

WHEN APPLIED TO THE SURFACE.

The *other method* of employing cold as a tonic, is, *by applying it to the surface of the body.* The application of *cold air* to the surface of the body, as a refrigerant power fit to moderate the violence of reaction, I have spoken of above; but probably it may also be considered here as a *tonic*, and *useful in cases of debility.*

Not only *cool air*,† but *cold water* also may be applied *to the*

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* This observation should be particularly attended to.

† There is nothing benefits a patient so much as *cold air.* In putrid fever all the windows and doors should be opened, and a free ventilation kept up. Doctor Saunders, long an eminent physician at Guy's, observed, that typhus patients, by being brought over London-Bridge, benefited by the air, and it was observed in the many reports, that such patients, as were obliged to be removed

surface of the body, as a refrigerant, and tonic. The *ancients* frequently applied it with advantage, to *particular parts*, as a tonic ;* but it is *a discovery of modern times, that in the case of putrid fevers, attended with much debility, the body may be washed all over with cold water.*†

This was *first* practised at *Breslaw* in *Silesia*, as appears from a dissertation under the title of *Epidemia verna quæ Wratislaviam, anno* 1737 *afflixit*, to be found in the appendix to the *Acta Nat. Curios.* Vol. X. And from other writers we find, that the practice has passed into some of the neighbouring countries ; although in *this island*, so far as I know, *we have hitherto had no experience of it* ‡.

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from the approach of an enemy, were benefited by this exposure to air. In the small-pox, the benefits are demonstrable. The prejudices in favour of sudorifics, and the hot regimen in fevers, is now however, pretty much removed: irresistible experiment obliges the haughtiest D)ctor to acknowledge, that the best way of cooling a human body heated by fever, is that which cools every other hot body, and would naturally occur to the most untutored mind, which *proud science never taught to stray*, namely, the admission of a cool atmosphere.

* Local applications of cold to inflamed parts.

† This is done by the means of a spunge.

‡ This practice has been carried on with the greater success by the late Dr. Currie, of Liverpool, who gives us these most useful practical observations:

" The safest and most advantageous time for using the aspersion or affusion of cold water, is when the exacerbation is at its height, or immediately after its declination is begun; and this has led me almost always to direct it to be employed from six to

OF DIFFERENT TONIC MEDICINES FROM THE MINERAL KINGDOM.

The medicines which have been employed in fevers, as *tonics*, are *various*. If the *Saccharum Saturni* has been found

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nine in the evening; but it may be safely used at any time of the day, *when there is no sense of chilliness present, when the heat of the surface is steadily above what is natural, and when there is no general or profuse sensible perspiration.* These particulars are of the utmost importance."

"If the affusion of cold water on the surface of the body be used during the cold stage of the paroxysm of fever, the respiration is nearly suspended; the pulse becomes fluttering, feeble, and of an incalculable frequency; the surface and extremities become doubly cold and shrivelled, and the patient seems to struggle with the pangs of instant dissolution, it does harm.—This remedy should therefore never be used when any considerable sense of chilliness is present, even although the thermometer applied to the trunk of the body should indicate a degree of heat greater than usual.

"Neither ought it to be used, when the heat measured by the thermometer is less than, or even only equal to the natural heat, though the patient should feel no degree of chilliness. This is sometimes the case towards the last stages of fever, when the powers of life are too weak to sustain so powerful a stimulus.

"It is also necessary to abstain from the use of this remedy, when the body is under profuse sensible perspiration, and this caution is more important in proportion to the continuance of this perspiration. In the commencement of sweating, especially if it has been brought on by violent exercise, the affusion of cold water on the naked body, or even immersion in the cold bath, may be hazarded with little risk, and sometimes may be resorted to

useful, it is, probably, as a *tonic*, rather than as a *refrigerant*; and the *salt of steel*, or other preparations of *iron*, which have

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with great benefit. After the sweating has continued some time, and flowed freely, especially if the body has remained at rest, either the affusion or the immersion is attended with danger, even though the heat of the body at the moment of using it be greater than natural. Sweating is always a cooling process in itself, but in bed it is often prolonged by artificial means, and the body is prevented from cooling under it to the natural degree by the load of heated bed clothes. When the heat has been thus artificially kept up, a practitioner, judging by the information of his thermometer only, may be led into error. In this situation, however, I have observed that the heat sinks rapidly on the exposure of the surface of the body even to the external air, and that the application of cold water, either by affusion or immersion, is accompanied by a loss of heat, and a deficiency of reaction, which are altogether inconsistent with safety.—The presence of severe diarrhœa or dysentery, seems to forbid the use of the cold affusion, or at least to render its advantages uncertain.

" Under these restrictions the cold affusion may be used at any period of fever, but its effects will be more salutary in proportion as it is used more early. When employed in the advanced stages of fever, where the heat is reduced, and the debility great, some cordial should be given immediately after it, and the best is warm wine.—Used in the three first days of fever, the cold affusion very generally stops the disease; the same happy effects sometimes follow its use on the fourth or even fifth day, but seldom later: even in the subsequent stages, where the heat continues preternaturally great, and the skin dry, it is of great and manifest advantage, almost immediately relieving the most distressing symptoms, particularly restlessness and delirium, and conducting the disease to a safe and speedier issue.

" At first I used fresh water, afterwards fresh water mixed

been employed, can act as tonics only. The preparations of *copper*, from their effects in *epilepsy*, are presumed to

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with vinegar, and lastly a saturated solution of sea salt in water. Salt water, either for the purpose of immersion or affusion, is more grateful to the patient than fresh water, and it is well known that it may be applied to the surface for a length of time with much less hazard. Persons immersed in sea water, and especially in saturated brine, for some time together, preserve the lustre of the eye and the redness of the cheek, longer than those in fresh water of an equal temperature, and such persons exhibit the vital reaction stronger, when removed from it. I preferred the brine to vinegar, as being cheaper, and more easily procured of the necessary quality: otherwise, it is well known how grateful vinegar is to patients in fever, and perhaps a mixture of vinegar and water of the proper strength might be preferable even to brine. But though I gave the preference of brine over fresh water, I have very often used the latter."

Dr. Gregory, the present illustrious professor at Edinburgh, frequently directs vinegar and water in putrid fever. He orders the bodies of his typhus patients to be washed with a sponge, dipped in cold water and vinegar, at least twice a day. This operation I shall call *lavatio frigida*. The earlier this mode is practised, says this eminent physician, the better; because, in typhus the patient grows daily worse, for in the second week there is a great increase of fever, and a proportional loss of strength, but even then Dr. Gregory has found the application of the wet sponge as a miracle; nor have *delirium* or *petechiæ* been considered by him as any bar to the adoption of this remedy; on the contrary, where these have been present, and the pulse much quickened, he has, by the *lavatio frigida*, speedily reduced the pulsations from 110 to 90 in the minute, and the delirium, and other threatening symptoms, have soon after disappeared. About a fortnight ago, a student of physic, who had been ill for some days before Dr. Gre-

possess a *tonic power*; but, whether their use in fevers be founded upon their *tonic* or their *emetic powers*, may be uncer-

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gory was applied to, had, besides a great degree of fever and delirium, numerous spots, or petechiæ, on his breast, belly, and extremities. The *lavatio frigida* was used on the day the Doctor first visited him, and by next morning the delirium had ceased, and the petechiæ disappeared. The pulse, which on the preceding day had been 110, was now at 80; and by continuing the application of the wet sponge now and then, the pulse became natural on the fourth day after the Doctor first saw him. Many similar cases might be adduced from the books of the clinical ward of the Royal Infirmary.

In the beginning of typhus, says Dr. Wright, of Barbadoes, I have seen the cold bath have the happiest effect; and through the day, when the sick were hot, washing the hands and face suddenly in cold water and *vinegar*, was exceedingly refreshing. Light covering in bed was directed, especially where there was any preternatural heat. In the early stages, where there were symptoms of inflammatory diathesis, we had recourse to small doses of antimonial powder alone, or mixed with a few grains of calomel. Where the body was costive, five grains of calomel proved to be the best laxative, or purge. By calomel, the pores of the skin were opened, a resolution of the fever was brought about, and the patient happily recovered.

This report of Dr. Wright extends to the remitting and intermitting fever, cholera morbus, diarrhœa and dysentery; it is signed by all the gentlemen of the medical staff at Barbadoes; and is in every point of view deserving of great attention.

Prejudices in favour of sudorifics, and the hot regimen in fevers, is now however pretty much removed: there was a time when patients were kept in a warm room, not a breath of air admitted, even opening the door was dreaded, and the patient besides was loaded with bed clothes. This was with the view of exciting a salutary sweat, or critical eruption. Tens of thousands

tain.—The use of *arsenic* and of *alum*, in intermittent fevers, seems manifestly to depend upon their *tonic* power. And, upon the whole, there *may* occur *cases* of *continued fevers*, which *may be cured* by *tonics* taken from the *fossile kingdom**: But *the use of these has been rare*, as well as *the effects uncertain*; and physicians have employed, more commonly, the *vegetable tonics*.

OF THOSE FROM THE VEGETABLE KINGDOM.

A *great variety* of *these* has been employed in the *cure of intermittent fevers* †; but *how many of them may be employed in continued fevers*, or in *what circumstances* of *these fevers*, is *not well ascertained* ‡; and I shall now only consider the question with respect to the most celebrated of these tonics, *the Peruvian Bark* §.

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have been killed by this mad practice in the small-pox, as also in fevers.

* The employment of these are so rare, that we shall not direct the practitioner as to the doses of any of them, but rather advise him, until more facts are obtained, to trust to the tonic power of the bark.

† As the menyanthes trifoliata, bog-bean, a powerful bitter, the willow-bark, tormentils, and other bitters. See our Family Herbal.

‡ The known properties of the Peruvian bark have prevented trials of this kind, but it is probable the Angustura and other barks may have great medical virtues for the cure of putrid fevers.

§ The Peruvians appear, however, to have long known its virtue, although we have no proofs of their revealing it to the Europeans before the middle of the last century. The Spaniards call the tree which produces it *Palo de Calenturas*, or fever tree. Linneus

OF THE PERUVIAN BARK.

This bark has been commonly considered as *a specific*, or as a remedy of which the operation was not understood. But it is certainly allowable to inquire into this matter; and I apprehend it may be explained.

RATIONALE OF ITS OPERATION.

To this purpose it is to be remarked, that as, in *many cases*, the effects of the bark are perceived *soon after* its being taken into the stomach, and *before* it can possibly be conveyed to the mass of blood, we may conclude, *that its effects do not arise from its operating on the fluids;* and must, therefore, depend upon *its operating on the nerves of the stomach*, and being thereby *communicated* to the rest of the *nervous* system. This operation seems to be a *tonic power*, the bark being a remedy in many cases of *debility*, particularly in *gangrene*: And, as the recurrence of the paroxysms of intermittent fevers depends upon a recurrence of atony, so probably the bark, by its tonic power, prevents the recurrence of these

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calls it *Cinchona officinalis*, in memory of the Countess de Cinchon, the Spanish Viceroy's Lady in Peru, who was the *first European* that had been cured by it. It was first brought into Italy by a Jesuit about the year 1649, and distributed through Europe by the fathers of that order; hence the names *Cortex* and *Pulvis Jesuiticus*, *Pulvis Patrum*. By CARDINAL DE LUGO's influence a cargo of it was procured and brought to *Rome* soon after; whence it received the name of *Pulvis Cardinalis de Lugo*. For further particulars vide our *Family Herbal*.

paroxysms; and this is greatly confirmed by observing, that *many other tonic medicines* answer the same purpose.

CAUTIONS IN ITS APPLICATION.

If the operation of the bark may be thus explained, from its possessing a tonic power, it is easy to perceive why it is improper when a *phlogistic diathesis* prevails; and, from the same view, we can ascertain in *what cases* of *continued fever* it may be *admitted*. These are either *after considerable remissions have appeared*, when it may be employed to prevent the return of *exacerbations*, on the same footing that it is used in *intermittent fevers*: or *in the advanced state of fevers*, when all suspicion of an *inflammatory state* is removed, and a *general debility* prevails in the system; and its being then employed is sufficiently agreeable to the present practice.

HOW TO BE EMPLOYED.

With respect to the use of the bark, it is proper to add, that good effects are to be expected from it, almost only when given in *substance* and *in large quantity* *.

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* The doses of the bark can only be determined from the state of the patient's stomach and the violence of the disease: It is usual to give a drachm of the powder at a dose, and repeat it every three hours, according to the exigency of the case, or the state of the patient's bowels. It frequently passes off by stool when given too liberally; this inconvenience is obviated by giving

WHEN STIMULANTS ARE TO BE EMPLOYED.

Another set of medicines to be employed for obviating debility and its effects, are the *direct stimulants*. These, in some measure, increase the tone of the moving fibres; but they are *different* from the *tonics*, as *more directly exciting* and increasing the action of the heart and arteries. This mode of their operation renders the use of them ambiguous; and when an *inflammatory diathesis* is present, *as so often happens in the beginning of fevers*, the effects of these stimulants may be *very hurtful*; but it still remains probable, *that, in the advanced state of fevers, when debility prevails, they may be useful.*

WHAT STIMULANTS ARE BEST.

What are the *stimulants* that may be most properly employed, I am *uncertain*, as the use of them in *this age* has been rare*; but I am disposed to believe that, of all kinds, *wine* is the best.

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a few drops, eight or twelve, of laudanum with each dose. I have been much in the habit of ordering two scruples of *bark*, and one of *serpentaria*, every three hours, and this has suited the stomach better than when the bark was given alone, and was found more efficacious. Where the powdered bark will not remain on the stomach, a desert spoonful of the tinctura Cinchon. comp. (Huxham's tincture of bark) may be usefully employed, more especially with the addition of a little porter to it, and six drops of the marine acid.

* Formerly Raleigh's *Cordial*, Confectio *Cardiaca*, contrayerva,

WINE.

Wine has the advantage of being grateful to the palate and stomach, and of having its stimulant parts so much diluted, that it can be conveniently given in small doses; so that it may be employed with *sufficient caution.* But it is of *little service unless taken pretty largely* *.

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crocus anglicanus, and other remedies of that class, were constantly employed, also the following, which we still order when patients are in *articulo mortis.*

R. Castor, gr. 15.
Croci, gr. 5.
Sal. Con. Cerv. gr. 7.
Cons. rosas. scr. ss.
Syr. zingib. g. 1.
Ft. Bol.

To be taken every four or five hours, drinking after it the following julep:

R. Julep e camphor.
——— Moscho āā unc. 4.
Spir. volat. aromat. gtt. 25.

* Wine is a valuable cordial, and is much superior to most other stimulants; it raises the pulse, supports the vis vitæ, promotes diaphoresis, and resists putrefaction.

With respect to the medical differences of wines, it may suffice to observe, that the effects of full bodied wines are more lasting than those of the thinner. *Red wines* are subastringent, and consequently possess a tonic virtue, and are hence more proper in fevers of all kinds where wine is at all admissible, when the prostration of strength, followed by stupor, low delirium, twitchings of the tendons, and other symptoms; however proper we may

RATIONALE OF ITS OPERATION.

It may be supposed, and on good grounds, that *wine* has an operation *analogous* to that of opium and some other *nar-*

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think the bark would be, and however eager we are to give it, this is no longer in our power. In this state the patient generally rejects it in all its forms, or will only take it in such small quantity as can be of no service. Yet the case is not entirely hopeless; for even in this situation, if the lips are moistened with a little warm wine, sweetened with sugar, he will shew a relish for it, and when given in spoonfuls will suck it into his mouth with signs of satisfaction, after rejecting every medicine with disgust, and refusing every other kind of nourishment whatever. I have known instances where the physician, not being convinced that the filling of the pulse and removal of delirium was owing to the wine, has set aside the use of it, till the return of the bad symptoms obliged him to resume it. It is generally necessary, in such cases, to begin by giving the wine warm with sugar, to induce the patient to take three or four spoonfuls; but afterwards he takes it freely cold, and without sugar. The reader might be astonished were I to mention the quantity of wine I have known some patients take in this fever, and in some cases of the confluent small pox, where the weakness, insensibility, and other symptoms were the same, and where the recovery of the patient was evidently owing to that cordial alone. The proper rule is to give the wine till the pulse fills, the delirium abates, and a greater degree of warmth returns to the extremities. Upon the smallest appearance of the stupor coming back, the pulse quickening and sinking, for they all go together, the wine must be resumed. Attentively observing this rule, I have often known patients, who in health were not fond of wine, and who would have been intoxicated with a single bottle, drink in the space of twenty-four hours two bottles of claret, without any other effect but that of strengthening the pulse, abating the delirium, removing the tremor, and creating a

cotic medicines. It may indeed be said, that we can distinctly mark its *stimulant power* only, which renders its effects

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moderate warmth on the skin. In others I have known a much greater quantity necessary to produce the same effect; but by giving that greater quantity the same effect was produced. I refrain from mentioning the exact quantity of wine which I have known some particular patients take, with the best effects, in this fever. It is sufficient to say, that it ought to be given in such quantity as the patient will willingly take, till the effects above mentioned are produced, and then stop; but on the first appearance of the pulse becoming weaker, or any other symptoms returning, more wine must be given, persevering in that quantity which is found, by attentive observation, sufficient to keep up the pulse and ward off the other bad symptoms.

When that quantity has been continued for several days, it may be gradually diminished; a little bread soaked in the wine, or some other simple nourishment, may be offered. After the patient is able to take panada mixed with wine, or bread soaked in it with any degree of relish, the appetite sometimes becomes very keen, and he is even willing to take more panada, rice, or sago mixed with wine than is proper for him. This return of appetite is undoubtedly one of the strongest indications of returning health; but it must be indulged with caution; the patient must be allowed to eat but little at a time, even of this kind of nourishment, and to return very gradually to his usual food.

Soon after the fever is entirely removed, and long before the patient has recovered his strength, he will, by proper management, be entirely weaned from the wine, or his allowance may be reduced to two or three glasses in a day, if the physician should think that quantity more proper than none. Indeed, the third part of what formerly had proved a salutary cordial and a restorative, would, in this state of convalescence, occasion a dangerous intoxication. So great a difference is there in the effect of

in the *phrenetic delirium* manifestly *hurtful*, and, in the *mild delirium*, depending on *debility*, as remarkably *useful*. But in all this, the *analogy* with *opium* is still obvious; and it is probable, that both *wine* and *opium* are more useful by their *sedative* and *antispasmodic*, than by their stimulant powers *.

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this cordial upon the constitution, in this state of extreme weakness, when all the natural functions seem loaded and clogged by disease, from what it has in perfect health, or when the fever being just removed, the animal functions gradually resume their former course. Claret is the wine I have generally recommended when the circumstances of the patient could afford it. I have seen the same good effects, however, from the use of port, madeira, and other wines; and when no kind of wine is to be had, brandy or rum diluted with water or milk, and sweetened with sugar, must be substituted in its place. In the state of stupor, debility, and low delirium, already described, spirits diluted have nearly the same effect with wine, and are even more relished by a certain class of patients.

* Whether wine or opium did more service by their *stimulant* or *sedative* powers, was much debated at Edinburgh, and so violent was the contention of the Brunonians and Cullenians, that it was necessary to have a rule made amongst the members of the Royal Medical Society, that no duel should be given from observations arising from the violence of such debates.

When considering sedatives according to their effects, may they not be naturally divided into two kinds, viz. *Direct and Indirects.*

By a *Direct Sedative*, I mean a medicine which operates more or less immediately as a sedative, without producing any stimulating effects; such as the cicuta, hydrogen air, and perhaps many other substances.

By an *Indirect Sedative*, I mean a medicine which, although it

THIRD INDICATION.

These are the means of answering our *second* general indication; and I now proceed to the *third*, which is, To obviate or to correct the tendency of the fluids to putrefaction.

FOUR GENERAL MEANS.

This may be done,

1. By *avoiding* any *new application* of *putrid* or *putrescent matter*.

2. By *evacuating* the *putrid* or *putrescent matter already present* in the body.

3. By *correcting* the putrid or putrescent matter remaining in the body.

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ultimately produces sedative effects, yet has some other previous stimulating operation; such as opium, &c.

Now, although *opium* has generally been ranked as the chief of the *sedantia*, yet its *stimulating power* is at present very well ascertained: and every practitioner knows (what we have already mentioned), that, if applied to the eye, or to a tender surface, it will produce more or less of irritation and pain, whatever ultimate sedative effects it may occasion. From this stimulating property, which is always more or less discoverable on its first exhibition, are we prevented from employing it in cases of *strong active inflammation*? For, in them, if *opium* is given alone, the *phlogistic* diathesis of the system is in general thereby increased, and the disease thus rendered more difficult of cure. But with *opium* the stimulant stage is of much shorter duration, than that of wine, and hence less proper to be employed in fevers.

4. By *supporting the tone of the vessels*, and thereby *resisting further putrefaction*, or *obviating* its *effects*.

FIVE MEANS OF AVOIDING PUTRESCENT MATTER.

The *further application* of *putrid* or *putrescent matter* may be *avoided*,

1. By *removing* the *patient from places filled with corrupted air*.

2. By *correcting* the air from which he *cannot be removed*.

3. By *preventing* the *accumulation* of the *patient's own effluvia*, by a constant *ventilation*, and *by a frequent change of bed-clothes and body-linen*.

4. By the careful and speedy removal of *all excremental matters* from the *patient's chamber*. *

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* These four practical observations should be particularly attended to, for the benefit of the patient, as well as those who attend upon him.

"In 1777," says the learned Dr. Haygarth, "I began to ascertain, by clinical observations, according to what law the variolous infection, and in 1780 and 1781 according to what law the febrile infection, is propagated. I found that the pernicious effects of the variolous miasms were limited to a very narrow sphere. In the open air, and in moderate cases, I discovered that the infectious distance does not exceed half a yard. Hence it is probable, that, even when the distemper is malignant, the infectious influence extends but to a few yards from the poison. I soon also discovered that the contagion of fevers was confined to a much narrower sphere. Upon these principles, I discerned the safety and wisdom of admitting fever patients into separate wards of the Chester infirmary itself, instead of an adjoining building.

"As many persons are liable to receive the typhous as the va-

violous contagion, and probably more, even if the persons who have had the small pox be excluded from this comparison; and in a far greater number, if we take into consideration that the latter distemper can only be obtained once, but the former an indefinite number of times.

" In a clean, well-aired room of a moderate size, the contagious poison is so much diluted with fresh air, as very rarely to produce the distemper, even in nurses exposed to all the putrid miasms of the breath, perspiration, and other discharges. Whereas, in the close, dirty, and small rooms of the poor, the whole family in general catch the fever. On these considerations, I ventured to propose the admission of typhous fevers into the attic story, on one side of our infirmary, to be separated into two wards. From the experience of *twelve years*, I am warranted to maintain the safety of this measure, if conducted under very easy practicable regulations. During this period, it never was *suspected* that infection has been communicated to a single patient in other parts of the house.

" From the time when a person receives the infection, till the commencement of fever, the poison remains in a latent state. It is, I believe, a common opinion, that fevers frequently begin immediately after exposure to contagion, without the intervention of any latent period whatever. But out of seventy-two cases, it was not suspected, except in one single instance, that the fever began immediately from the time when the infection was caught. It appears, that out of seventy-two cases, the latent period of the typhus (allowing four days of fever before the patient becomes infectious) was less than ten days, in only five, or probably in only three cases; that it was less than seventeen days in only eleven or thirteen; that it fell upon some of the days between the 17th and 33d day in forty-one, which is considerably more than half the cases. On the whole, it appears, that the *latent period* of infection varies from a few days to two months.

" From a large collection, and an attentive consideration of facts relative to this distemper, have been formed the following *rules to prevent infectious fevers.*

5 By *avoiding animal food,* * or *correcting it.* †

"1. As safety from danger entirely depends on cleanliness and fresh air, the chamber door of a patient ill of an infectious fever, especially in the habitations of the poor, should never be shut; a window in it ought to be generally open during the day, and frequently in the night. Such regulations would be highly useful, both to the patient and nurses; but are particularly important, previous to the arrival of any visitor.

"The bed curtains should never be close drawn round the patient: but only on the side next the light, so as to shade the face.

"3. Dirty clothes, utensils, &c. should be frequently changed, immediately immersed in cold water, and washed clean when taken out of it.

"4. All discharges from the patients should be instantly removed. The floor near the patient's bed should be rubbed clean every day with a wet mop or cloth.

"5. The air in a sick room has at the same time a more infectious quality in some parts of it than in others. Visitors and attendants should avoid the current of the patient's breath,—the air which ascends from his body, especially if the bed curtains be removed,—and the vapour arising from all evacuations. When medical or other duties require a visitor or nurse to be placed in these situations of danger, infection may be frequently prevented by a temporary suspension of respiration.

"6. Visitors should not go into an infectious chamber with an empty stomach: And, in doubtful circumstances on coming out, they should blow from the nose, and spit from the mouth, any infectious poison, which may have been drawn in by the breath, and may adhere to those passages."

* This should be carefully attended, even the yolk of an egg is animal food.

† When taken, acids should be immediately after given.

OF EVACUATING PUTRESCENT MATTER.

The *putrid* or *putrescent matter, already present in the body,* may be *evacuated* partly by *evacuating frequently* the contents of the intestines;* and *more effectually still,* by sup-

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* The word *frequently* has great meaning here, and this practice is confirmed by the ingenious Dr. Hamilton. I was appointed physician to the Royal Infirmary upwards of 30 years ago. "At this time," says Dr. Hamilton, "the cure of typhus was thought to consist chiefly in the removal of atony and spasm of the extreme vessels of the surface of the body. For this purpose, together with other medicines, weak antimonials were given freely. An emetic and a purgative medicine were commonly exhibited on the first approach of the attack, but the state of the stomach and bowels was little regarded in the after periods of fever. An alvine evacuation was occasionally procured by a mild glyster, while purgatives were given with extreme diffidence, lest by their operation they should rivet the spasm of the extreme vessels, and increase debility, one of the supposed direct causes of death in fever. These apprehensions may still bias the practice of many, as they certainly did bias mine for a long time.

"A typhus fever, with symptoms more than usually malignant, appeared in Edinburgh in summer 1779. Having been often disappointed in promoting the cure of this fever by means of mild antimonials, which were then so much in use, I was induced, by the same views which directed the employment of these, to use the *calx antimonii nitrata*, Ph. Edin. editæ anno 1774. This antimonial remedy was not ineffectal; but I remarked that it was beneficial only when it moved the belly. In this case the fæces were black and fœtid, and generally copious. On the discharge of these, the low delirium, tremor, floccitatio, and subsultus tendinum which had prevailed, were abated; the tongue, which had been dry and furred, became moister and cleaner, and a feeble creeping pulse acquired a firmer heat.

"On reflecting afterwards on these circumstances, it appeared to me to be probable, that, as the purgative effect of the calx antimonii nitrata had been the useful one, any purgative medicine might be substituted for it; and that, by this substitution, the unnecessary debility of an exhausted patient by sweating and vomiting would be avoided.

"More extended experience confirmed these conjectures; and I was gradually encouraged to give purgative medicines during the course of typhus, from the commencement to the termination of the disease.

"I have directed a strict attention to this practice for a long time, and I am now thoroughly persuaded, that the full and regular evacuation of the bowels relieves the oppression of the stomach, clears the loaded and parched tongue, and mitigates thirst, restlessness and heat of surface; and that thus the later and more formidable impression on the nervous system is prevented, recovery more certainly and speedily promoted, and the danger of relapsing into the fever much diminished. I am disposed to refer the superior utility of purgative medicines in typhus fever to the circumstance of their operating throughout the whole extent of the intestinal canal; to their acting upon an organ, the healthy functions of which are essential to recovery, in a manner that is consonant to the course of nature, by propelling its contents from above downwards; and to their moving, and completely evacuating the feculent matter which, in this case, becomes offensive and irritating. Constipation, together with the change which fever appears to produce in the fluids secreted into the intestines, seems to be the cause of this alteration in the state of the fæces. The necessity of expelling therefore this noxious mass is therefore apparent; and if my opinion be correct, the operation of a glyster, the stimulus of which is confined to the rectum, must be altogether inadequate to procure the full evacuation which the circumstances of the case require. Accordingly, it is now some years since I have relinquished almost entirely the use of emetics and glysters in fever. I trust to a purgative medicine to insure a regular alvine evacuation, although the daily exhibi-

tion of a purgative for this purpose is not always required. By this mode of treatment, I avoid the harassing distress which the operation of an emetic occasions, as well as the trouble and fatigue which accompany the exhibition of glysters.

" This practice, by means of purgative medicines, does not supersede other remedies employed to fulfil other indications, particularly the free access to pure and fresh air. I am even ready to allow, that although I exclude emetics and glysters from my general practice in typhus fever, yet particular circumstances may arise to make both the one and the other necessary.

" I cannot, however, avoid remarking, that for many years past, I have found these other remedies, and wine in particular, to be less necessary than I formerly thought. This may be owing in part to typhus fever being less malignant than it was some time ago, and in part to the purgative medicines, which I employed with freedom, removing and obviating symptoms of debility. If this be a just view of the case, the plain inference is, that while purgative medicines preserve a regular state of the body, they do not aggravate the debilitating effects of fever.

" This doctrine is at variance with that which is commonly entertained; but I am confident that it is consonant to the fact. The complete and regular evacuation of the bowels, in the course of fever, is the object to be obtained. Within this limit I have had much satisfaction in prosecuting the practice; nor have I, in a single instance, had occasion to regret any injury proceeding from it, for I am not an advocate for exciting unusual secretion into the cavity of the intestines, and for procuring copious watery stools: these, while they are not necessary, might increase the debility so much dreaded.

" In most instances of fever, this practice, by purgatives, is conducted with ease, and a tolerable degree of certainty. The observation and experience of individuals may be necessary, on some occasions, for directing measures where it is not easy to lay down precise rules. The effect of purgative medicines may not be foreseen in every instance, or be altogether immediately under command; at any rate, however, the subsequent doses of

purgatives, and the frequency of their repetition, will be regulated by the operation of preceding ones.

"It is of importance to consult in all respects the ease and comfort of patients in fever. The exhibition of purgatives, therefore, should be so timed, that their effects may be expected during the day, when proper assistance can be best procured for the sick.

"The purgative medicines which I have chiefly used in fever, are, calomel, calomel and jalap, compound powder of jalap, aloes, solutions of any of the mild neutral salts, infusions of senna, and sometimes the two last conjoined.

"My experience in the treatment of typhus enables me to draw the following conclusions.

"1st, Purgative medicines are given with safety in typhus to evacuate the contents of the bowels.

"2d, Under this limitation they may and ought to be exhibited at any period from the commencement to the termination of the fever.

"3d, Under the same limitation, no circumstance, or symptom, in the course of typhus, contra-indicates the exhibition of purgative medicines.

"4th, The early exhibition of purgatives relieves the first symptoms, prevents the accession of more formidable ones, and thus cuts short the disease.

"5th, In the advanced period of typhus gravior, symptoms that indicated the greatest danger were relieved by the evacuation of the bowels, and the patients, in this instance, recovered.

"6th, Reconvalescence from typhus is greatly promoted and confirmed, by the preservation of a regular state of the body. The same means secure against the danger of a relapse."

For my own part, I have usually ordered two grains of calomel, and in half an hour after ten grains of rhubarb, and a scruple of vitriolated kali, which has usually acted in less than three hours, which if not the case, the rhubarb and vitriolated kali (potassæ sulphas) was repeated in mild cases; salines in the state of effervescence were given every three hours, and the *purgative* re-

porting the *excretions* of *perspiration* and *urine*, by the plentiful use of *diluents*. *

DILUENTS AND ANTISEPTICS.

The putrid or putrescent matter, remaining in the body, may be rendered *more mild and innocent by the use of diluents*; or *may be corrected by tye use of antiseptics*. These last are of many and various kinds; but which of them are conveniently applicable, or more particularly suited to the fevers, is not well ascertained. Those most certainly applicable and useful, are *acids* of all kinds, *acescent aliments*,† *neutral salts*,‡ and *fixed air*. §

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peated each morning, then two scruples of bark, and one scruple of snakeroot, (pulv. virg. serpent.) was given every two hours, until the putrid fever became cured. The proximate cause of putrid fever is probably in the primæ viæ, and not in the spasm of the extreme vessels. Effects are too frequently taken for the cause, producing a wrong practice.

* Dr. Cullen has before treated of the use of antimonials, in producing a *diaphoresis*, or plentiful perspiration on the surface of the body, to be kept up by diluents and the removal of thirst. What these should be are before-mentioned, (page 19.) But in putrid fever, we find nothing so grateful as cold drinks, especially porter and cyder, which we prefer to wine. Claret we esteem more than Port, and these may be mixed with a little water, and acidulated with some lemon-juice, and given frequently, not omitting more than two or three hour's interval.

† The most effectual way of allaying intense thirst is abundant drinking of quenching liquids; and that the proper aliment for a feverish and capricious stomach is not that which it loaths, as it does every kind and every preparation of animal food, but that

which it longs for, which is the case with almost all sorts of mild, juicy, ripe fruit: these spread a refreshing moisture over the parched tongue and throat of the languid patient, moderate the ardour of the thirst, dilute and cool the heat of his juices, promote urine, and tend to keep the belly open. The last is a point of great importance to this fever, where we often find such a tendency to new accumulations in the intestines as soon as the old are removed, or of bilious, redundancy to the gall-bladder and its ducts.

It is not uncommon in the practice of medicine, for physicians to follow the same plan on different, or perhaps opposite principles. Thus one may recommend ripe fruit, vegetable juices, and acidulated drinks in this fever, with a view to correct the putrid tendency of the humours. Another, who knows it is impossible for these fruits and drinks to correct what he thinks does not exist, may still prescribe them with a view to their deterging the excretory vessels, by their sudorific and diuretic qualities; and each may be confirmed in his supposition, by the benefit the patient receives from the prescription. Some people may doubt either supposition, but nobody can doubt the agreeable and refreshing effects of such fruits and juices, on the parched, thirsty, and languid patient. Sometimes ripe fruits, particularly strawberries and wine, are the only nourishment he will take: which circumstance of itself forms a presumption, that they are the properest for him. At other times, when he refuses panada, sago, rice, when prepared without wine, he will take them in considerable quantity mixed with wine and sugar; and when he takes such nourishment with any degree of relish, they seldom fail of being beneficial. They enable him to bear the open air and a free ventilation for a longer time, which always tends to hasten his recovery.

Linnæus remarks, that the Author of Nature has wisely disposed our tastes according to the food best adapted for our nature. Nor is it, says he, less worthy of admiration, that our taste changes with disease, thus in a putrid fever the patient cannot endure the smell or taste of meat, but at this time *acids* are highly agreeable.

Wherever climate produces immoderate heat, benevolent Nature has taken care to relieve its parched inhabitants with fruits or juices adapted to their situation. The people of Spain and Portugal, of Turkey, and Asia in general, live on grapes, peaches, nectarines, figs, melons, and rice. Those who live within the tropics have their woods, or groves, filled with orange, lemon, citron, and other delicate fruits. As they approach nearer the line, they have also pine-apples, chaddocks, and cocoa-nuts. On such they live in health, and by such they recover when sick. What might we not learn from them in dieting our sick? Nature too points the way. A man in a fever pants after every thing that can quench his thirst; and when oranges, ripe fruits, or currant jellies, are craved by his feelings, and swallowed with delight, how must he be oppressed with Raleigh's Cordial Confection.

In former times the greatest attention was paid to every thing that seemed to relieve or offend the sick. The old physicians observed, with particular care, what nature craved, and found, that while foods, especially animal substances, were commonly disrelished, and often abhorred, drinks were greedily desired; and that those of the sour and acescent kind only appeased the patient's longing. The ancients took the hint, and contrived such drinks. Accordingly oxymel was a principal febrifuge with Hippocrates; ripe fruits were recommended by Aræteus and Trallian; and so long ago as the tenth century, Rhazes gave acids to prevent and cure the plague.

The juices of citron and sorrel, says Senertus, resist putrefaction, peculiarly strengthen the heart, correct the feverish habit, and have aperient powers at the same time. Van Swieten boasts that the juice of ripe fruits requires no preparation, extinguishes thirst, tempers heat, opens the belly and urinary passages, and furnishes the most exquisite solace to a stomach oppressed with putrid bile. Of his master, Boerhaave, we are told, that in a stubborn putrid case he ordered, with success, ten pounds of cherries daily. One of the ablest physicians of this century has observed, that it is a vulgar error to suppose diseases are made more

violent, or more frequent, by an intemperate use of fruit. To add one quotation more from the best writer we know upon bilious diseases, "Small draughts of barley water, with rob of elder or currants, syrup of lemons and raspberries, not forgetting ripe fruits, mulberries, strawberries, grapes, cherries, pine-apples, are excellent; for the virtues of acids are such, as to correct all putrefaction, to resolve by their detergent qualities all bilious concretion, to favour and promote all the secretions; and, while they do not relax the solids too much, they refresh the spirits by their fragrance." I may add, that the juice of strawberries and currants extracted, with water, makes an admirable drink, as the fruits themselves make an excellent food along with bread; and we have the rob of the last in perfection and plenty all the year round, to supply the place of citron or lemon-juice.

Decoctions or infusions of frumentaceous substances, seasoned with sea salt, cream of tartar drink, thin wines, juice of lemons, and plain vinegar, do all contribute largely to an immediate, and perhaps a lasting change of a corrupted state of the juices.

When the disease is not very violent, the vegetable acids, says Dr. Fordyce, are generally sufficient; and they may be given very freely. It is a mistaken notion, that they will produce the cholic, or disagree where there already subsists one, as in putrid cases of cholic we know that nothing proves a speedier cure.

Chymistry has moreover furnished the shops with the nitrous, muriatic, and vitriolic acids; which, according to the chymists, differ more in their degree of concentration than in their other qualities. In a very putrid state of the juices they are used with the greatest advantage. The muriatic acid, continues Dr. Fordyce, has with me the preference, not only from the observations I have made of its effects, but from the universally acknowledged antiseptic power of the sea salt, from which it is extracted. The virtues of those acids, in general, when given internally, are distributed through all the parts of the body, the mouth, stomach, blood vessels, and secretory organs: for, applied to the mouth, they increase the secretions of saliva, and allay thirst: taken

into the stomach, they excite appetite by correcting its juices; for nothing palls it more than putrid matter lodged there.

The yellow fever prevailed at the Caraccas, in South America, in October, 1793, with great mortality. Nearly all died, says Dr. Rush, who were attended by physicians. Recourse was finally had to an old woman. Her remedy was a liquor called narencado, a species of *lemonade*. With this she drenched her patients for the first two or three days. It induced plentiful sweats, and probably, after correcting, discharged the acrimony of the bowels.

This plan has been pursued by me with great success. Mr. Roberts, of Piccadilly, was seized with a putrid fever, and took, by my advice, the juice of a lemon every two hours. This was continued for a few days, when a diarrhœa coming on, the fever was entirely removed.

According to the experience of Krugelstein, putrid fever readily yields to the combined power of the mineral and vegetable acids. His method of exhibiting them is as follows: He first gives cream of tartar, from one to two drachms, and immediately after it, from fifteen to twenty drops of vitriolic acid, properly diluted with gruel, or arrow root. These are repeated every two or three hours, according to the exigency of the cases. Dr. Krugelstein relates a number of extraordinary cures performed by this new practice.

That acids have a powerfully antiseptic power as well as nitre, which is used with salt to preserve meat, we have the following experiments by Dr. Macbride.

Having diluted the acids of vitriol, of sea-salt, and of tartar, together with vinegar and the juice of lemons, all, as nearly as I could judge, to the same degree of weakness, leaving them just so strong as to be fairly sensible to the taste, as to change the blue juices into red, and to effervesce plainly upon the addition of an alkali; I then put some ounces of each into five phials, and in every one of them immersed a little bit of fresh mutton; and a sixth phial, with nothing but water and a bit of mutton, served as a standard.

They were all placed in a moderate degree of heat, (on the top

of the furnace, along with the fermenting mixtures of the second table) and suffered to remain for four days.

TABLE I.—ACIDS diluted as ANTISEPTICS.

ACIDS.	AFTER STANDING. 24 Hours.	48 Hours.	3 Days.	4 Days.
(1) of Vitriol	Sweet.	Sweet.	Sweet.	Sweet.
(2) of Sea-salt.	Sweet.	Sweet.	Sweet.	Sweet.
(3) of Vinegar	Sweet.	Sweet and much swelled.	Sweet.	Sweet.
(4) of Lemons	Sweet.	Sweet and much swelled.	Sweet.	Sweet.
(5) Water, as a Standard.	Smell grown offensive.	Very fetid.	Putrid, and soft.	

OBSERVATION.

It appears by the foregoing Table, that they were all, excepting the standard, sweet at the end of four days. I next hung up all the sweet pieces in the open air, where they soon became dry, and remained sweet.

Thus it appears that acids, even when greatly lowered, have a strong degree of power to resist putrefaction.

TABLE II.—ACIDS tried as Correctors of Putrefaction.

ACIDS of	24 Hours.	48 Hours.	3 Days.	4 Days.
Vitriol.	The bit of putrid flesh was found hard, shrivelled up, and almost sweet.	Entirely sweet; very much shrivelled and hardened.	As on the day before.	As on the day before.
Sea-salt.	Not so much hardened as in the Sp. Vitrioli, nor so much sweetened.	More sweet than on the preceding day, but not entirely sweet.	No change since yesterday.	Putrid smell returned.
Vinegar.	Softened; greatly swelled, and entirely sweet.	No change since yesterday.	No change.	Grown livid, but still soft and sweet.
Lemon-juice.	Softened; greatly swelled, and entirely sweet.	No change since yesterday.	No change.	Grown perfectly white, but quite sweet.

Here I put a number of small pieces of mutton into a phial with water, and placed it in a moderate degree of heat, in order to make them putrefy the sooner; I found them, after standing four days, sufficiently soft and putrid; I then put five of these bits of putrid mutton into as many cups, and poured, on the first, spirit of vitriol; on the 2d, spirit of sea-salt; on the 3d, vinegar; and on the 4th, fresh lemon-juice; the 5th cup contained only water, and was left as a standard, by which the others were to be com-

pared. The mineral acids in this experiment were diluted so as to reduce them, as nearly as could be judged, to the strength of the vinegar that was used.

The following letter from Sir William Fordyce to Sir John Sinclair, President of the Board of Agriculture, sets the virtue of acids in putrid fever in the strongest point of view.

George Street, Hanover Square,
June 1, 1799.

DEAR SIR JOHN,

When I devoted myself to the study of physic, as far back as the year 1743, there prevailed at Uppingham, in Rutlandshire, and the neighbouring villages, a malignant sort of small-pox, which justly alarmed that part of the country, insomuch that every medical practitioner, who looked after the infected, was precluded from visiting patients in other diseases; by which means those in that distemper came to be totally deserted. In this calamity the overseers of ten or twelve adjacent parishes solicited from me such physical aids as I was capable of giving. From a careful perusal of Dr. Sydenham on the small-pox, joined to the daily instructions I received from a favourite pupil of the immortal Boerhaave, I proceeded to take the best care I could of my new patients.

I soon discovered in what cases the antiseptic medicines, as oxymel, cream of tartar, lemon juice, the vitriolic and nitrous acids, with wine and opiates, were likely to be necessary or useful; and under what circumstances recourse was to be had to the lancet, and the antiphlogistic regimen.

From that period to the present, I have been naturally curious to examine the works of such writers, whether ancient or modern, as might be able to furnish me with information concerning *malignant diseases*, the most to be dreaded, and the most difficult to cure.

Excepting the boils recorded in the Old Testament, I have not met with an account of any distemper that could with propriety be termed pestilential before the age of Hippocrates, the father of physic; who describes an endemic, to which he gives that name,

and in which he mentions a variety of symptoms nearly allied to those of putrid diseases in our time, but not specifically characteristic of the Pestilence. Nor does the plague of Athens, as represented by Thucydides, who was himself infected by it, and whose narrative is the best I have found in any ancient author, sufficiently resemble the plague of London, Marseilles, or Moscow, to justify a comparison between them. In short, no history of the symptoms or cure of the pest, in the true sense of that word, has been transmitted to us, as far as I can recollect, which could authorize or lead to a plan for preventing so formidable a malady, or for nipping it in the bud when it begins to appear:—a circumstance that reflects double honour on the accomplished and magnanimous Empress of the North, for the directions she gave on the breaking out of the plague at Moscow, of which the particulars have been described by Dr. Samoilowitz, with a precision that renders of little moment all that had before been written on the pestilence in general.

His valuable work comes recommended by this peculiar advantage; that he describes the disease in all its stages, from his own experience as well as observation, having voluntarily taken up his abode in one hospital after another, for the benevolent purpose of receiving and attending the infected, from the first appearance of that most alarming disease; though he was not ignorant that the very touch of those unfortunate persons, or of any thing that had touched them, was fatal.

So far did his humanity, heroism, and love of his country, carry that amiable man! How superior to those names that have been often so loudly, though so unjustly, celebrated for their achievements in the destruction of millions!

What remains for me is to point out, if possible, some simple, easy, and rational method of putting the human body, where the disease in question prevails, into such a state as shall probably guard it against being affected by this deadly poison. That such a prophylactic may be found in the muriatic acid, or the concentrated spirit of sea-salt, I am induced to believe for the *reasons* and from the *facts*, which I will now subjoin.

Almost thirty years have elapsed since I heard by accident of a dry-salter, who had acquired a great reputation and a large fortune, from possessing a secret that had enabled him to send out to the Indies, and other hot countries, beef and pork in a better state of preservation than any of the trade. As he was observed to pour into each cask a small bottle of transparent liquor, it occurred to me, that this could be no other than the *spirit of sea-salt*; and I began to wonder how a preparation, the greatest antiseptic in nature, and extracted from a material that had been in use from the beginning of time, for preserving as well as seasoning food, should have remained unemployed for the purpose of preserving from putrefaction the juices of the human body; while the *nitrous* and *vitriolic acids* had been so often used in the practice of medicine. It seemed the more surprising, now that chymistry had taught us to extract the *muriatic acids*, alike pleasant to the taste, and refreshing to the senses, at so small an expence, from a material furnished by Providence in the greatest plenty. If salt itself was found so beneficial for preventing putrefaction in animal substances, would not the extract from it operate in the same manner on our juices, with a power increased in proportion to its superior purity and strength.

Constantine Rhodocanacides, a Greek, who calls himself his Majesty's chymist, published a pamphlet in 1664, expressly on the internal and external uses of the *muriatic acid*, of which he claims the honour of being the inventor; at least, he probably distilled it in a purer state than it had been done by any body before that period. He published at the same time several certificates of the great benefit that had been received from it.

In a variety of complaints he sold it as a nostrum, and calls it the *Alexicacon* Spirit of the World, recommending it in all cases: "When," says he, "we consider the noble and universal charac-" ter of sea-salt, the ingenious must conclude, that a spirit sepa-" rated from its dregs, and presented to us in its strength and vi-" gour, cannot but be worth welcome reception." And then he goes on to recapitulate its use externally, as well as internally;

recommending it as preferable to *lemon juice* and *vinegar*, as more healthily taken mixed with water, beer, ale, cyder, or wine, and as proper for all sorts of cookery; adding, that no error can be committed in taking any quantity from ten to forty drops; and that, as a preservative, that quantity will serve. But if any man be actually sick, he asserts its being a received preservative against the *plague*; yet we do not find any writer concerning the plague of London, who either at that time, or since, has mentioned its internal use. I should add, that he recommended the use of it to travellers by sea or land, in the water and putrid things that they are forced to live on. It may be taken to the amount of *one hundred drops*, according to the quantity of malignant symptoms, in all their drinks, and mixed with all their food, within the twenty-four hours.

From these hints, I was led on, continues Sir William, to use it internally in all *putrid fevers*; and this I have done with constant success ever since, especially where I found the tongue black and dry, with a black glare on the teeth, and the worst sort of putrid fever; and it has proved, in truth, *wonderfully efficacious* on such occasions, in checking the dyscrasy of the humours, in restoring the vital powers, that are more or less broken down according to the degree of putrefaction, and in changing the petechiæ from a purple to a brown, and still more diluted or redder colour, till they become quite evanescent.

I might here mention a great variety of cases to illustrate its *surprising power* in correcting the most putrid state of the juices; but shall confine myself to a few, which I hope will be sufficient.

The Rev. Mr. Stuart, son to the Earl of Bute, was in the year 1789, taken with the usual symptoms of a *putrid fever*, violent head-ach, pain in his loins, sickness at his stomach, anguish about the præcordia, and extreme debility, with delirium. A vast number of the true petechiæ, purple as violets, perhaps not fewer than a thousand, made their appearance at the same time. We had immediate recourse to the *muriatic acid* in great abundance;

giving him likewise camphor and Mindereri spirit, with wines, pine-apples, grapes, and other ripe fruits. In the course of eight-and-forty hours, the spots were changed to a *brown* colour; and in a few days more, he was left in a state of safety. I could not prevent his Noble Father from witnessing, in person, the progress of a disease that often proves dangerously infectious. His Lordship observed, with *astonishment* and *delight*, the operation of this *admirable medicine*. He has since repeatedly expressed an earnest wish to see its powers made public, from his conviction of its being calculated to prevent, as well as extinguish, the worst symptoms of putrid diseases.

When the late Earl of Moreton charged me with the care of the present Lord, while a youth, labouring under the same distemper, I comforted his Lordship extremely in the hope of preserving his son, if I could have time *to pickle his juices with the spirit of sea-salt;* which I did very largely, and it succeeded. After this, he recommended me warmly to those of his friends who required such pickling in similar cases.

I was desired some weeks ago by Mr. Bliss, the apothecary at Hampstead, to inspect some eruptions of an uncommon kind on Master Plenderleith, who complained of such an extreme debility as gave his friends great uneasiness. I immediately discovered the symptoms of *petechial fever*. Besides the usual medicines, bark, camphire, and spiritus Mindereri, he took, by my directions, every twenty-four hours, to the amount of eighty-six drops of the *muriatic acid*, which in the course of a few days changed entirely the appearance of the purples, and left him in safety.

It were needless to quote more cases in proof of the *wonderful efficacy* of the *muriatic acid* in the *most malignant diseases* of this country; but it may be proper to add, that this *truly antiseptic medicine* has been constantly used in the hospital of the Third Regiment of Foot Guards, by Messrs. Leslie, Mearns, or Hay, *for many years* with the *greatest success in all putrid diseases* of that regiment.

What I have most earnestly at heart is, from the detail above,

to press the abundant use of this most powerful antiseptic in all putrid cases, especially in those countries where they commit such ravage, and the ideas of an unavoidable destiny contribute so unhappily to its propagation and mortality.

I am, &c.

WILLIAM FORDYCE.

FUMIGATION.—Put into a basin some salt, add two ounces of vitriolic acid, immediately a quantity of a white vapour will arise, the *marine acid gas*, which will effectually purify any house or room after infection. Contagion will be thereby prevented. This important discovery was made by Dr. Carmichael Smith, who stopped a fever on board a Spanish ship, and hindered it spreading, for which he received the thanks of parliament, and was made physician to the king. The door ought to be partly open, whilst this process is performed.

The Rev. Mr. Townsend, Rector of Pewsey, mentions the following acid foods as peculiarly beneficial in putrid fever.

No. I.

Fresh butter-milk, rather sour.

No. II.

Take a pint of good butter-milk; leave it to be sour; then put on it a quart of warm new milk in a wooden bowl, in the bottom of which are holes large enough to transmit the whey, but not the butter-milk. In twelve hours a rich subacid curd of easy digestion will remain.

No. III.

Leave a quart of new milk three or four days in a bowl till it becomes a jelly.

No. IV.

Put skim milk into a deep wooden vessel, which must have a peg at the bottom. Place this in a vessel of boiling water, and there leave it till the milk coagulates; then draw off the acid whey, restore the peg, and surround it once more with boiling water. At the end of twenty-four hours draw off more whey, and beat the curd with a wooden stick. It is then fit for use, and may be mixed with sugar.

No. V.

Infuse oatmeal in a wooden vessel till it ferments, and begins to acquire some degree of acidity. Strain off the liquor from the oatmeal, and evaporate by boiling to the consistence of a jelly; this may be eaten mixed with white wine and sugar.

In general, however, we direct gruel or sago, with white wine.

‡ Meaning those produced by the alkalies and acids in the state of effervescence.

§ MERIAN, a German writer of the last century, relates a singular fact, which proves the antiseptic power of fixed air. The waters of *Schwalbach*, in the Landgravate of Hesse, are so strongly impregnated with fixed air, that even when thrown off in large quantities into some rocky caverns, through which these waters pass, they even retain their virtues, for it is found, that every kind of animal substance is preserved in these cells from putrefaction. "*In æstuosissima etiam æstate carnes quascunque absque omni putredine et fætore conservari**."

Merian thus points out the effects of this volatile principle, without being acquainted with the true nature of the principle itself. The Hon. Mr. Boyle was the first who ascertained the antiseptic power of some kinds of factitious air; Sir John Pringle discovered, that putrid substances were sweetened by being immersed either in fermenting or effervescing mixtures; and Dr. Macbride has clearly proved, that it is the fixed air produced in these mixtures, which recovers putrid substances to a state of sweetness, for by repeated experiments it has been shewn that meat does not corrupt in fixed air, and that even tainted meat recovers its sweetness in this species of air.

Among the lower orders of people, bottled porter and cyder, which philosophers know contains abundance of fixed air, is given to persons labouring under putrid fever, and almost miracles have been achieved. The example, indeed, deserves to be imitated;

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* Merian, *Topographia Hassiæ*, p. 123, et 127.

PUTREFACTION RETARDED.

The progress of putrefaction may be considerably retard-

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for cautiously and prudently administered, these would be found by the practitioner, to be remedies of the greatest efficacy.

In malignant fevers, says Dr. Percival, wines abounding with fixed air may be administered, to check the septic ferment, and sweeten the putrid *colluvies* in the *primæ viæ*. If the laxative quality of such liquors be thought an objection to the use of them, wines of a greater age may be given, impregnated with fixed air, by a simple but ingenious contrivance of my friend Dr. Priestley.

A remedy in Putrid Fevers, which contains much fixed air has been lately started by the Rev. Mr. Cartwright, which merits the highest attention. Seventeen years ago, says this gentleman, I went to reside at Brampton, a very populous village near Chesterfield; I had not been there many months before a putrid fever broke out among us. Finding by far the greater number of my new parishioners much too poor to afford themselves medical assistance, I undertook, by the help of such books on the subject of medicine as were in my possession, to prescribe for them. I early attended a boy about fourteen years of age, who was attacked by this fever. He had not been ill many days before the symptoms were unequivocally putrid. I then administered bark, wine, and such other remedies as my book directed. My exertions, however, were of no avail; his disorder grew every day more untractable and malignant, so that I was in hourly expectation of his dissolution. Being under the absolute necessity of taking a journey, before I set off I went to see him, as I thought for the last time, and I prepared his parents for the event of his death, which I considered as inevitable, and reconciled them in the best manner I was able, to a loss which I knew they would feel severely. While I was in conversation on this distressing subject with his mother, I observed in a corner of a room a small tub of wort working. The

ed, and its effects obviated, by supporting the tone of the vessels: and this may be done by tonic remedies; the chief

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sight brought to my recollection an experiment I had somewhere met with, *of a piece of putrid meat being made sweet by being suspended over a tub of wort in the act of fermentation*. The idea instantly *flashed* into my mind, that the *yeast* might correct the putrid nature of this disease, and I instantly gave him two large spoonfuls. I then told the mother, if she found her son better, to repeat this dose every three hours. I then set out on my journey. Upon my return, after a few days, I anxiously inquired about the boy, and was informed he was recovered. I could not repress my curiosity, though I was greatly fatigued with my journey, and night was come on; I went directly to where he lived, which was three miles off, in a wild part of the moors. The boy himself opened the door, looked surprisingly well, and told me he felt better from the instant he took the yeast.

After I left Brampton, I lived in Leicestershire. My parishioners being there few and opulent, I dropped my medical character entirely, and would not even prescribe for any of my own family. One of my domestics falling ill, accordingly the apothecary was sent for. His complaint was a violent fever, which in its progress became putrid. Having great reliance, and deservedly, on the apothecary's penetration and judgment, the man was left solely to his management. His disorder, however, kept daily gaining ground, till at length the apothecary considered him in very great danger. At last, finding every effort to be of service to him baffled, he told me he considered it as a lost case, and that, in his opinion, the man could not survive four and twenty hours. On the apothecary thus giving him up, I determined to try the effects of *yeast*. I gave him two large table spoonfuls. In fifteen minutes from taking the yeast his pulse, though still feeble, began to get composed and full. He, in thirty-two minutes from his taking the yeast, was able to get up from his bed, and walk in his room. At the expiration of the second hour, I gave him a basin of sago,

of which are, *Cold*, and *Peruvian Bark*, both sufficiently treated of above.*

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with a good deal of *lemon*, wine, and ginger in it; he eat it with an appetite: in another hour I repeated the yeast; an hour afterwards I gave the bark as before; at the next hour he had food; next he had another dose of yeast, and then went to bed, it was nine o'clock. I went to see him the next morning at six o'clock; he told me he had a good night, and was recovered. I, however, repeated the medicine, and he was able to go about his business as usual.

About a year after this, as I was riding past a detached farm-house at the out-skirts of the village, I observed a farmer's daughter standing at the door, apparently in great affliction. On inquiring into the cause of her distress, she told me her father was dying. I dismounted, and went into the house to see him. I found him in the last stage of a putrid fever; his tongue was black; his pulse was scarcely perceptible; and he lay stretched out, like a corpse, in a state of drowsy insensibility. I immediately procured some *yeast*, which I diluted with water, and poured it down his throat. I then left him with little hopes of recovery. I returned to him in about two hours, and found him sensible, and able to converse. I then gave him a dose of bark. He afterwards took, at a proper interval, some refreshment. I staid with him till he repeated the yeast, and then left him with directions how to proceed. I called upon him the next morning at nine o'clock. I found him apparently well, walking in his garden. He was an old man, upwards of seventy.

I have since administered the yeast to above fifty persons labouring under putrid fever, and what is singular, continues this benevolent clergyman, "I have not lost *one* patient."

My practice confirms these observations.

*After putrid fever has entirely subsided, *hysteria* comes on from great debility, the wants of the system requires food, when a *mutton-chop* should be first granted, or the *longings* of the patient

SECTION II.

OF THE CURE OF INTERMITTENT FEVERS, OR AGUE.

IT remains now to consider the cure of *intermittent fevers*; and with respect to these, we form also *three* general indications.

THREE INDICATIONS.

1. *In the time of* intermission, *to prevent the recurrence of* paroxysms.

2. *In the time of* paroxysms, *to conduct these so as to obtain* a final solution *of the disease.*

3. *To take off* certain circumstances *which might* prevent *the* fulfilling of the two first indications.

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gratified. Should there be great lowness, the following draught may be given.

R. Mist. Camphor, dr. 6.
Æther Vitriol, gtt. 20.
Aq. Cinnam. Aq. Menth. pip. āā dr. 3.
Confect. Aromatic. scr. 1.
Ft. Haust.

To be taken three or four times a day, or when very low. A dessert spoonful of Huxham's tincture of bark (tinct. cinch. comp.) may be given every day, an hour before dinner.

THE FIRST INDICATION ANSWERED TWO WAYS.

The *first indication* may be answered in two ways:

1. By *increasing* the action of the heart and arteries some time *before the period of accession*, and *supporting* that increased action *till the period of the accession be over*, so as thereby to prevent *the recurrence of the atony and spasm of the extreme vessels* which give occasion to the recurrence of paroxysms.

2. *Without increasing the action of the heart and arteries*, the recurrence of paroxysms may be prevented, by supporting the tone of the vessels, and thereby preventing atony, and the consequent spasm.

MEDICINES WHICH PRODUCE THESE TWO EFFECTS.

For the purpose mentioned, *the action of the heart and arteries may be increased*,

1. By various *stimulant remedies*, *internally* given, or *externally* applied, and that without exciting sweat.

2. By the *same remedies*, or *others so managed* as to excite *sweating*, and to *support* that *sweating* till *the period of accession be for some time past.*

3. By *nauseating doses* of *emetics*, given *about an hour before the time of accession*, thereby supporting and increasing the tone and action of the extreme vessels.

VARIOUS TONIC MEDICINES.

The tone af the extreme vessels may be supported without increasing the action of the heart and arteries, *by various tonic medicines;* as,

1. *Astringents* alone.
2. *Bitters* alone.
3. *Astringents* and *bitters* conjoined.
4. *Astringents* and *aromatics* conjoined.
5. Certain *metallic tonics*.
6. *Opiates*.
7. An *impression* of *horror*.

A good deal of exercise, and as full a diet as the condition of the patient's appetite and digestion may allow of, will be proper *during the time of intermission*, and may be considered as belonging to this head.

BARK PREFERRED.

Of all the *tonic* remedies mentioned, the most celebrated, and perhaps the *most certainly effectual*, is the *Peruvian bark*, the tonic power of which we have endeavoured to demonstrate before, when explaining its use in continued Fevers.

The same observation as before made, is especially proper in the case of intermittents: and further, with respect to these, the following observations or rules are offered here.

RULES FOR THE ADMINISTRATION OF BARK.

1. That the *bark* may be employed with safety *at any period of intermittent fevers*,* providing that, at the same time, there be neither a *phlogistic diathesis* prevailing in the system, nor any considerable or *fixed congestion* present in the *abdominal viscera*.

2. The proper time for exhibiting the bark in intermittent

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* Of however long standing.

fevers, *is during the time of intermission;* and where *intermissions are to be expected,* it is to be abstained from in the time of *paroxysms.**

3. In *remittents,* though *no entire apyrexia* occurs, the *bark* may be given during the *remissions;* and *it should be given, even though the remissions be inconsiderable,* if, from the known nature of the epidemic, *intermissions* or considerable *remissions* are not to be soon *expected,* and *that great danger is apprehended from repeated exacerbations.*

4. In the case of *genuine intermittents,* while a *due quantity* of *bark* is to be employed, the exhibition of it *ought to be brought as near to the time of accession* † as *the condition of the patient's stomach will allow.*

5. In general, in all cases of intermittents, it is not *sufficient* that the recurrence of paroxysms be *stopped* for once by the use of the bark; *a relapse is commonly to be expected, and should be prevented by the exhibition of the bark, repeated at proper intervals* ‡.

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* This is very judicious advice, there being a danger of converting *intermittent* into a *remittent,* or even a *continued* fever.

† That is, before the cold fit.

‡ The *quantity of bark* to be given in the *intermission* must be *as great as the stomach can possibly bear.* It is very common to give *two ounces* during the intermission, in doses of *half a drachm* or *two scruples every* hour, especially in *quartans.* But it has been found more successful in its operations, when we begin with small doses, viz. one scruple in the commencement of the intermission, and increase the doses to one drachm towards the end of it. The bark sometimes sits better on the stomach by adding to it about an eighth or a fourth of its weight of some aromatic antiseptic. *Virginian snake* root answers this intention very well. *An ounce*

ANOTHER PRACTICE RECOMMENDED.

Our second general indication for conducting the paroxysms of intermittent fevers, so as to obtain a final solution of the disease, may be answered,

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of red bark and *two drachms of snake root* taken during the intermission of a tertian, if the stomach can bear it, or if no diarrhœa comes on, generally prevents the next paroxysm. In case of diarrhœa being produced by bark, ten or twelve drops of *laudanum* are to be given three or four times with each dose of the bark.

The substances generally joined with the bark in prescription, seem calculated either to promote its efficacy or reduce it to the intended form, without having regard to the agreeableness of the composition. This however is a point of great consequence, as the taste of the bark, and the large quantity of it necessary for the cure, make the patient frequently loath it before its use ought to be discontinued. When made into an electuary or bolus with syrups, it sticks about the mouth and fauces; whence its taste remains a long while; but, when made into an electuary with *mucilages*, it passes down freely, scarcely leaving any taste behind it. The taste of the bark is very effectually concealed by *liquorice root* in a decoction, or by the extract in an electuary. The extract of logwood also conceals the taste of the bark, and an electuary made with it, and a sufficient quantity of mucilage, is a very elegant form. Decoctions, infusions, and tinctures of the bark are much less efficacious than the *substance*.

When a paroxysm has been stopped by the bark, it is by no means safe to abandon the use of this medicine altogether, as a relapse is always to be apprehended. The doses are to be gradually diminished, and the intervals between the times of giving them are to be increased: After tertians, we may diminish the quantity daily one half, till we arrive at two drachms a-day; for eight days longer, we ought to give two scruples thrice a-day;

1 By exhibiting *emetics* during the time of the *cold stage*, or *at the beginning of the hot.**

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after which period, two scruples ought to be given night and morning for a week longer. After quartans, when the dose is reduced to two drachms a-day, it will be prudent to continue giving this quantity daily for a fortnight, and half a drachm night and morning for a fortnight longer.

In order the more effectually to prevent a relapse, great attention must be paid to diet and regimen. Patients are generally extremely voracious after the cure of intermittents; and indeed they require considerable nutrition to supply the waste occasioned by the fever. Small quantities of food are to be taken at once and to be often repeated; and the most nutritive, and at the same time easily digestible food, must be chosen, as broths with barley and white flesh meat, roast lamb, veal, chickens, new laid eggs, broiled fresh fish, &c. Acrid, acescent, and irritating aliments, and acids are to be carefully avoided. The drink ought to be in moderate quantity, but rich and strong; as mild ale, and Port wine and water.

With respect to the regimen proper for convalescents from intermittents, it may suffice to observe, that sleep may be indulged in. Exercise without fatigue is of great use, either by walking, by riding on horseback, or in a carriage, according to the strength of the patient. But, above all, cold must be carefully avoided; for nothing more effectually produces a relapse than an imprudent exposure to cold damp air, or a neglect in keeping the body properly clothed.

The practice of giving purges after the cure of intermittents is highly blamable, and is frequently the cause of a *relapse*. Should costiveness be troublesome, it may be removed by very mild emollient clysters, or one grain of aloes in a pill.

* This practice, of giving *vomits* in the end of the cold stage and an *opiate* after their operation, is very old. It is mentioned by Sydenham, Boerhaave, Van Swieten, and most practical writers.

2. By *opiates* given during the time of the *hot stage.**

The circumstances which may especially prevent the ful-

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* Doctor Trotter, however, just reverses this practice. He mentions in his Medicina Nautica, that finding intermittents became very frequent on board the Vengeance, one of the Channel fleet under Earl Howe, he was resolved to try the full effects of opium in preventing the fit. He reports, the moment the sick felt the first approach of an attack, they were sure to run to the cock-pit for relief. A dose of tinctura opii was then administered; if the first dose did not bring on some warmth in the space of ten or fifteen minutes, from twelve to twenty drops more were given. He never gave less than thirty drops the first time, and never had occasion to go beyond sixty in the space of an hour, for in no case did the remedy fail, we are informed, to give relief in this time.

He further reports, that in a few minutes from the exhibition of the opiate, an exhilaration of spirits was perceived, which was quickly followed by a relaxation of the surface, the countenance looked cheerful, and a flush was spread on the cheek. The pulse, from being weak, quick, and sometimes irregular, became less frequent, full, and equal; an agreeable warmth was diffused over the whole frame, and every unpleasant feeling vanished sometimes in a quarter of an hour. Sleep now and then followed a large dose; but this did not in general happen.

As soon as any symptoms indicated another paroxysm, whether on the following day or not, till the tertian interval, the tinctura opii was repeated in the same manner as in the former fit, and always with equal success; so that the patient seldom experienced much trembling or shaking. He adds, the second paroxysm was commonly an hour or two later in the day than the preceding one, and but few instances occurred where any indisposition indicated a third attack at the expected period of accession. The very patients themselves, he observes, were not a little surprised at the sudden change in their sensations, by so small a quantity of me-

filling of those two indications, and therefore give occasion to our third, are, a *phlogistic diathesis* prevailing in the system,

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dicine, and that they were certainly the completest cures which ever came under his observation.

I have been long in the habit of giving twenty drops of laudanum, and the same of vitriolic æther, in peppermint and cinnamon water, adding two scruples of aromatic confection, before the cold fit, then giving strong liquorice tea, made from sliced liquorice root; before the accession or at the time of the cold, and after that, the bark with unvaried success. Nevertheless, I should do the great Dr. Cullen the justice, that we find Dr. Lind an advocate for the exhibition of opium likewise in the hot fit. He tells us he has observed, that, if taken during the intermissions, it had not the least effect either in preventing or mitigating the succeeding paroxysm; when given in the cold fit, it once or twice seemed to remove it; but that when administered half an hour after the commencement of the hot fit, it generally afforded immediate relief. When given in the hot fit, he observed the following effects to ensue: 1st, It shortened and abated the fit; and this with more certainty than an ounce of the bark was found to effect the disease. 2d, It generally gave a sensible relief to the head, took off the burning heat of the fever, and occasioned a profuse sweat. This sweat was attended with an agreeable softness of the skin, instead of the burning sensation which affects patients sweating in the hot fit, and was always more copious than in those who had not taken opium. 3d, It often produced a soft and refreshing sleep to a patient tortured in the agonies of the fever, from which he awaked bathed in sweat, and in a great measure free from all complaints.

The Doctor has always observed, that the effects of opium are more uniform and constant in intermitting fevers, than in any other disease, and are there more quick and sensible than those of any other medicine. An opiate thus given soon after the commencement of the hot fit, by abating the violence, and lessening

and *congestions* fixed in the *abdominal viscera*. The first must be removed by *blood-letting* and the *antiphlogistic regimen*; the *second*, by *vomiting* and *purging*.

ON CRITICAL DAYS IN FEVERS.

On this subject in fevers, it is proper to observe, that many physicians have been of opinion there is something in the *nature* of *fevers* which generally determines them to be of a *certain duration*; and therefore that their *terminations*, whether *salutary* or *fatal*, happen at certain periods of the disease rather than at others. These periods are called the

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the duration of the fever, preserves the constitution so entirely uninjured, that, since he used opium in agues, a dropsy or jaundice has seldom attacked any of his patients in those diseases. When opium did not immediately abate the symptoms of the fever, it never increased their violence: on the contrary, most patients reaped some benefit from an opiate given in the hot fit, and many of them bore a larger dose at that time than they could at any other. Dr. Lind offers it as his opinion, that opium in this disease, is the best preparative for the bark; as it not only produces a complete intermission, in which case alone that remedy can be safely administered, but occasions such a salutary and copious evacuation by sweat, as generally to render a much less quantity of bark requisite.

Where the bark has not immediately succeeded, an electuary of bark, to an ounce of which is added a drachm of vitriolated iron, (ferri sulphas,) or two drachms of rust of iron, (ferri carbonas,) mixed with syrup of ginger, has never failed; the size of a nutmeg being taken, wrapped up in some moistened wafer paper, which last can be had of any pastry-cook, and it completely hides the taste of the bark.

Critical Days; carefully marked by Hippocrates and other ancient physicians, as well as by many moderns of the greatest eminence in practice; while at the same time many other moderns, of no inconsiderable authority, deny their taking place in the fevers of these northern regions which we inhabit.

I am of opinion that the doctrine of the ancients, and particularly that of Hippocrates, on this subject, was well founded; and that it is applicable to the fevers of our climate.

I am of this opinion, *first*, Because I observe that the animal economy, both from its own constitution, and from habits which are easily produced in it, is readily subjected to periodical movements. *Secondly*, Because, in the diseases of the human body, I observe periodical movements to take place with great constancy and exactness; as in the case of intermittent fevers, and many other diseases.

These considerations render it probable, that exact periodical movements may take place in continued fevers; and I think there is evidence of such movements actually taking place.

WHAT THE CRITICAL DAYS ARE.

The critical days, or those on which we suppose the termination of continued fevers especially to happen, are, the *third* (a day not critical intervenes) then the *fifth*, *seventh*, *ninth*, *eleventh*: (now we find that two days intervene) then the critical day is on the *fourteenth*, *seventeenth*, and *twentieth*. We mark none beyond this last;* because, though fevers

* If the patient goes beyond the twentieth day, he falls into

are sometimes protracted beyond this period, it is, however, more rarely; so that there are not a sufficient number of observations to ascertain the course of them; and further, because it is probable that, in fevers long protracted, the movements become less exact and regular, and therefore less easily observed.

THE PROOF FROM DE HAEN.

That the days now mentioned are the critical days, seems to be proved by the particular facts which are found in the writings of Hippocrates. From these facts, as collected from the several writings of that author by *De Haen*, it appears, that of 163 instances of the termination of fevers, which happened on one or other of the first twenty days of the disease, there are 107, or more than *two-thirds* of the whole number, which happened on one or other of the eight days above mentioned; that *none* happened on the *second* or *thirteenth* day; and upon the *eighth*, *tenth*, *twelfth*, *fifteenth*, *sixteenth*, *eighteenth*, and *nineteenth*, there are but *eighteen* instances of termination, or one-ninth of the whole.

What determines the periods to be changed about the *eleventh* day, we have not clearly perceived; but the *fact is certain:* For there is *no instance* of any termination on the *thirteenth*, that is, the *tertian* period next follows the *eleventh;* whereas, upon the *fourteenth*, *seventeenth*, and *twentieth*, which mark *quartan* periods, there are *forty-three* in-

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hysteria. In common language such fevers are called, a *one-and-twenty day fever.* The deafness then disappears.

stances of terminations, and *six* only on all the intermediate days between these.*

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* Perhaps the constitution being very strong, produces an ague, every day, hence called a one-day ague, or *quotidian*, less strong; a two-day ague, *tertian*, still weaker; a four-day ague, or *quartan*, or in other words, the most usual interval of an ague is that of forty-eight hours, which is named the TERTIAN period. The next most common is that of seventy-two hours, and is named the QUARTAN period. Some other intervals also are observed, particularly one of twenty-four hours, named therefore the QUOTIDIAN; and the appearance of these are pretty *frequent*. But *all other intervals* longer *than that of the quartan* are extremely *rare*, and probably are only irregularities of the tertian or quartan periods.

The paroxysms of pure intermittent fevers are always finished in less than twenty-four hours; and though it happens that there are fevers which consist of repeated paroxysms, without any entire intermission between them; yet in such cases it is observed, that though the hot and sweating stages of the paroxysm do not entirely cease before the twenty-four hours from their beginning have expired, they suffer, however, before that time, a considerable abatement or REMISSION of their violence; and, at the return of the quotidian period, a paroxysm is in some shape renewed, which runs the same course as before. This constitutes what is called a REMITTENT FEVER.

When in these remittents the remission is considerable, and the return of a new paroxysm is distinctly marked by the symptoms of a cold stage at the beginning of it, such fevers retain strictly the appellation of REMITTENTS. But when it happens, as it does in certain cases, that the remission is not considerable, is perhaps without sweat, and that the returning paroxysm is not marked by the most usual symptoms of a cold stage, but chiefly by the aggravation or EXACERBATION of a hot stage, the disease is called a CONTINUED FEVER.

DR. CULLEN'S OWN OBSERVATIONS.

Our *own observations* amount to this, That fevers with moderate symptoms, generally cases of the *synocha*, frequently terminate in *nine* days, or *sooner*, and very constantly upon *one* or *other* of the *critical days* which fall within that period: But it is very rare, in this climate, that cases of either the *typhus* or *synochus* terminate before the *eleventh* day; and, *when they do terminate on this day, it is for the most part fatally.* When they are protracted *beyond this time*, I have very constantly found, that their terminations were upon the *fourteenth*, *seventeenth*, or *twentieth* day.

In such cases, the salutary terminations are seldom attended with any considerable evacuation. A *sweating* frequently appears, but is seldom considerable; and I have hardly ever observed critical and decisive terminations attended with vomiting, evacuations by stool, or remarkable changes in the urine. The *solution* of the disease is *chiefly to be discerned* from some return of *sleep* and *appetite*, the *ceasing* of *delirium*, and an *abatement* of the *frequency* of the *pulse*. By these symptoms we can often mark *a crisis* of the disease: But it seldom happens *suddenly* and *entirely*; and it is most

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In some cases of continued fever, the remissions and exacerbations are so inconsiderable as not to be easily observed or distinguished; and this has led physicians to imagine, that there is a species of fever subsisting for several days together, and seemingly consisting of one paroxysm only. This they have called a CONTINENT FEVER; but, in a long course of practice, I have not had an opportunity of observing such a fever. Vide Nozology, p. 7.

commonly from some *favourable symptoms* occurring upon *one critical day*, that we can *announce* a *more entire solution* upon *the next following*.

Upon the whole, I am persuaded, that, if observations shall be made with attention, and without prejudice, I shall be allowed to conclude with the words of the learned and sagacious Gaubius, "Fallor, ni sua constiterit HIPPOCRATI auctoritas, GALENO fides, NATURÆ virtus et ordo."

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN.

I. OF THE INFLAMMATORY FEVER, OR SYNOCHUS.

As respects the pure inflammatory fever, it generally arises in plethoric habits from over heating the frame by all those stimuli, which in excess injure the constitution; and here *bleeding*, with *other modes of depletion*, especially in country patients, is of primary importance; but great care should be taken to know whether this high fever be not the *first stage* of SYNOCHA, when the greatest caution is required, or TYPHUS, when such practice would occasion the death of the party; also in children, to discern whether it be not symptomatic of *dentition*, *worms*, or *some eruptive disorder*, when such a practice might destroy the patient.

THE BRUNONIAN DOCTRINE.

HOW THE REMEDIES SHOULD BE VARIED.

The error of physicians in general is, that they have a great reliance on *bleeding*, and *bleeding only*. It was to the honour of the great Dr. BROWN first to notice this dangerous error, and I feel the more pleasure, in stating his *practical* improvements in medicine, as they are so little understood even by those who profess themselves to be *Brunonians*.

As the noxious powers, that produce predisposition to diseases,

or diseases themselves, act some on one part, some on another, with somewhat more force than on any other equal part; and as this part is commonly that to which they are directly applied;* so the powers, which are employed as remedies, in order that their general effect may reach the whole body with the more certainty, should be, in the same manner, differently applied to different parts.

The action of every exciting power, whether salutary or hurtful or curative, always extends over the whole body, the whole seat of excitability, but still with the inequality mentioned in the fourth chapter of Part the First. This is the basis of the distinction with respect to the present subject: which is, that, as every power acts most effectually on the part where its action is immediately exerted, it is better to trust to a number, every one of which possesses that advantage, than rely on any one remedy, however powerful otherwise; as by that means, whatever be the indication, whether it be to increase or diminish excitement, the effect will be more equally produced over all in consequence of there being a number of parts that have had a strong action exerted upon them.

The cure, therefore, of any sthenic disease whatever, is improperly entrusted to *bleeding alone*, though that is one of the most powerful of the debilitating remedies. The reason is, that, though the excitability is sufficiently reduced by that remedy in the greater blood-vessels, perhaps too much, yet in the extremities of these, as well as in the rest of the body, it is not sufficiently reduced. Nor is the alternation of *bleeding* with *purging* a perfect mode of cure;† because, though the excessive excitement be sufficiently, and more than sufficiently, removed in the greater blood-vessels, and in the innumerable small arteries, whether exhalant or mucous, which discharge their fluid into the intestines; yet, neither on the perspiratory terminations of the arteries, nor on the

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* Vide Par. XLIX. of Brown's Elements.

† This was Sydenham's practice.

rest of the body, is an equal debilitating energy exerted: the small vessels, for instance, which open into the stomach, are not sufficiently relieved of their distending load, and therefore stimulating load, the stimulus in any vessel being the quantity of its fluid. And although *vomiting* should be conjoined with the two remedies just mentioned, even this would not be enough to produce an equally diminished excitement; as there would still remain in the perspiratory vessels the same state of excitement, as also in the rest of the body, that is not vascular. In violent sthenic diseases, therefore, after diminishing the diathesis, and in the slighter from the beginning of the disease, the addition of the operation of *sweating* to the evacuations that have been spoken of, will produce a more equal diminution of excitement, and a more perfect solution of the disease. For by means of this evacuation, not only from the larger blood-vessels, in the interior parts of the body, but from an infinity of outlets both of the external, and internal surface of the body, an immense quantity of fluids, every-where distending, and, thereby, producing a very great sum of excitement, is withdrawn.* *Nor is this all.* For, since in slight sthenic affections, the patient can take much nourishing food, and in them all, too much; the consequence must be, that, however the quantity of blood and other fluids has been diminished, if food, which is the only power that can produce blood, continues to be taken, till the vessels, in proportion to the quantity that has been taken, will again go on to be filled, and to be fired with the fuel of excessive excitement. To prevent this inconvenience, and to diminish excitement, with still greater equality over the system; *abstinence*, or a certain allowance of vegetable matter in a fluid form, and *watery drink*, will have a very great effect.

In most of the species of sthenic diseases there is, a loss of appetite, which is an essential symptom; it is therefore a superfluous caution to say, that in these cases we are not to allow the patients

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* Dr. Brown appears to have placed little reliance upon *saline medicines*.

solid flesh-meat or broths, because they naturally nauseate, and refuse such food, and the things that people chiefly relish at these times are those which are most proper, namely, subacid and watery drinks, or at most thin gruels, or panada acidulated.

In Ireland, the patients, in all febrile diseases, generally use a kind of drink which seems almost peculiar to this country, and which is extremely grateful, and well adapted to cool and quench thirst; it is whey, made of sour butter-milk and new milk, boiled up together; hence called Two-milk Whey.

In the commencement of inflammatory diseases, and while the pulse continues full and strong, this is the drink which is most in use, and it appears to answer remarkably well; but in places where this two-milk whey cannot be procured, almond-milk, barley-water, sage-tea, decoction of the roots of couch-grass; hot water poured on currant jelly, or on sliced apples, and lemonade, are in their turns to be given to the sick person; and if there be any appetite for somewhat more substantial, barley or oaten-gruel, panada, roasted apples, currant jelly, or such light nourishment is to be given, in such quantities, and at such intervals, as the patients shall desire, and the particular circumstances of the case may suggest.

But in some purely inflammatory cases, there is sometimes no great degree of sickness, and the patients have a desire for taking more solid food than is proper; but in such cases, it will be the business of those who have the care of the sick person to see that he does not touch solid flesh-meat, or even broth, so long as the intenseness of motion in the vascular system shall continue so great as to give sufficient reason to apprehend any danger.

We should not only enjoin what he is to eat, but the patient should always be required to abstain from every sort of food but vegetable, as well as from all strong liquors, and indeed, one might say, from all but watery liquors acidulated. This direction does not seem to have been so much neglected in words by former writers and authors, as in the actual application to practice; it having been delivered slightly, by-the-by, and as if it had been thought of no consequence, so that it made no impression upon the mind of

the reader or hearer. No stimulus is more powerful, and, therefore, in this part of the practice, more hurtful, than that of the articles of *diet:* consequently, whatever quantity of blood is taken from the vessels, whatever quantity of serous fluid is carried off by purging, if this stimulus is not effectually guarded against, the *effect of all this evacuation* may easily be counteracted by improper diet.

Nor is this sufficient. For if, after taking all the precautions and securities that have been recommended, the degree of heat, that proves hurtful from its stimulus, be allowed to approach the external surface of the body; it will produce another inequality of excitement, however much it may have been properly and equally diminished by the other means of cure. Wherefore, as the sthenic diathesis depends so much upon the stimulus of heat, directly affecting the skin,* and is, on that account, prevalent in the skin in preference to other parts; to make sure of rendering the diminution of excitement as equal as possible, the debilitating effect of *cold* should be opposed to the high degree of excitement, which the heat has produced.

Dr. Brown in confirmation of this doctrine, gives us a very remarkable case of a person labouring under fever, who living in the old town of Edinburgh, escaped the vigilance of his nurse; flew naked out of the house in a very keen frost with snow upon the ground, across the streets, passed over into the new town, and from that to the fields beyond it. He soon became sensible of his state, stole into a house next to him, got some clothes thrown about him, and was carried home in a chair, perfectly cured of his disease. From which, and a prodigious number of facts to the same purpose, all concurring in the proof of the debilitating operation of cold, there can hardly arise a doubt in the mind, that in a certain high degree, if it could be conveniently used, or if there were occasion to have recourse to it for want of efficacious remedies, it would at once remove the highest degree of sthenic state that ever

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* See Par. CXIII. of the Elements.

occurs in disease, and reduce the excitement from the nearest approach to 70 down to 40. Nay it might run into the opposite extreme and go all the way to death. But we shall by and by have occasion to observe, that we are so well provided with effectual remedies as not to be under any temptation of straining this to its height. And we shall also find that a number of remedies in a moderate degree are preferable to any one, or to a smaller number in a higher degree. The discovery of the principle upon which the cure of sthenic diseases turns, has enabled us to render the cure both more complete and exact, than it could have been without principle.

When, at last, all the directions, which have been thus fully pointed out, have been executed, still, to re-produce the equality of excitement, suited to good health; it remains, that we be on our guard against the *stimuli* that arise from the *intellectual functions* and *passions*. For, as they have great effect in producing sthenic diathesis,* so the prevention of them, must be equally effectual in removing that diathesis, and in reproducing that equality of excitement, upon which health depends.†

If the cure of sthenic diseases hitherto has consisted in bleeding, purging, and in the use of refrigeration in a few cases; and, if the other objects, which have now been so fully explained, have either been totally neglected, or mentioned in a slight way, by-the-by, and as if of no consequence, and, in the treatment prescribed in these cases, not reduced to any principle; it will easily appear, from what has been said above, and in other parts of this work, how much the knowledge of these diseases has been *improved*, both in

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* See Par. CXXXVIII. CXL. of his Elements.

† As the most healthy state of man is occasioned not by the operation of any *one*, or of *a few exciting powers*, but by the *united operation of them all*; so neither is its re-establishment to be effected, but by the same united operation of all the remedies, the last of which come to be the ordinary means of the support of the healthy state.—*Brown*.

the practical and reasoning part: and it will now, at last, be found a certain and established fact, that both the nature and true theory of sthenic diseases, as well as the method of treatment, considered either as an art and imitative, or as rational and scientific, has been discovered and demonstrated.

This is taken verbatim from Brown's Elements of Medicine, being his eleventh chapter, and deserves every attention of the practitioner.

II. THE PUTRID FEVER, OR TYPHUS.

Besides the discoveries mentioned in the notes, we have to record other means, which judicious practitioners have found out in their treatment of so formidable a disease as *putrid fever*, which once carried off one-tenth of the population of great cities, and in some instances a still greater number; hence this disease has had various appellations, as the jail, camp, and hospital fever, &c. as it oftener appears where persons are crowded together, probably from putrid animal miasmata.

EMPLOYMENT OF OPIUM AND ARDENT SPIRITS IN PUTRID FEVER.

An account of this practice in *putrid fever*, we have from a pupil of Dr. BROWN in a most *extraordinary* case.

A friend of mine, says Dr. Jones, was seized with a fever. He was treated in the ordinary way, excepting that he had a *scanty allowance* of *wine*; which is a practice beginning to take place among the most violent and powerful opposers of Dr. Brown, in consequence of these practitioners perceiving, from its successful use in his own hands, and in those of his followers, that it will obtrude itself upon them at last. But their prejudices in favour of the old practice, with which they have been early imbued, oppose an insurmountable barrier to their using it, and the other *diffusable stimulants*, in that liberal and copious manner in which only it can be of use. Notwithstanding, therefore, the *wine* that was given him, the symptoms of weakness went on and increased, till it was plain, even to a good woman who attended him as his nurse, that death must be the consequence of the plan of cure, hitherto

pursued, being further continued. He had all the symptoms of approaching death; and from which she, in a large course of practice in her way, had never seen one recover. This declaration she made to me in the presence of the landlady of the house. So certain was their expectation of his death, that the clothes in which he was to be interred had for some time before that been every night laid out. The physicians who attended him suspected that there was a *Brunonian*, as they call the followers of the new doctrine, in the number of the friends who visited the patient; and if he ventured to prescribe any thing for him, that it would be according to the doctrine which Brown taught, and therefore very different from theirs. The nurse was therefore very strictly charged, upon the pain of all mischief which they could do her in her way of business, to see *their* prescriptions executed, and to admit of *no other*. That such was the threatening conversation they held with the woman, I am warranted to infer from her own assertion; that she had hitherto prevented my interference, because her means of living were at stake. But now, as nothing but *death* presented itself to her expectation as the *result* of the *ordinary plan* of *cure*, she thought herself justified to God, in allowing the *new mode* of *cure* as fair a trial as the short space of life that the patient seemed to have before him would admit of.

To explain my assertion of her not thinking herself justifiable to man, her words were the following: "I shall give your doctrine a complete trial, upon this condition only, that you will keep the secret. My bread depends upon it. I am ruined if what I am about to do be divulged. And if ever it comes out, I tell you beforehand, that I will deny the whole matter." In consequence of this paction, *opium* in large quantities, because *spirits* and *wine* could not be poured in, was administered from 12 o'clock in the day through the course of the night. The consequence of which was, the next morning pretty early, when the physicians visited him, that they declared him "better," as I am told; and, as a proof that they thought so, ordered him chicken and chicken-broth. He remained in this happy and unexpected state till the afternoon about four, when he was seized with a raging delirium. This alarmed the

nurse and myself. I then consulted Dr. Brown what I should do with my patient. He was not alarmed for the nature of the thing, but for the consequences, if the *former plan* of cure were returned to, which might prove the cause of the patient's death, and might afford an opportunity to other physicians to impute that death to him. The rumour spread among the people in consequence of such a report from physicians of reputation and influence, might, he easily perceived, terminate in his ruin. I told him the nurse wished to see him; and he desired her to be brought before him. She asked his opinion of the case; and his reply was, "That there was scarce a physician any where, and more certainly those attending the patient, who would not assert, that the present formidable symptoms were the effect of the *high stimulant powers* which had been administered to him the night before. But he added, that if the same mode of cure were not continued, the patient would *certainly die* of a very different affection from that which they would contend it was. He endeavoured to assure her, that there was either no inflammation in the case at all, or that it was a very different affection from the inflammation that physicians were acquainted with: That, instead of requiring bleeding and other evacuant antiphlogistic means, it required the very same treatment which had been last employed. He appealed to the beneficial effect of that treatment in support of his opinion; and he asserted with confidence, that the *intermission* of the *stimulant powers* through the course of the day was the cause of all that had happened: for she told him she had given nothing of that kind during the day, *from the full persuasion that the patient's disease was removed.* The purport, in short, of all this, is, that the present affection was a disease of debility of the whole system, predominant in the brain in consequence of the great sinking of strength, which constantly follows a total cessation of the use of such highly stimulant powers; and that a sinking was a consequence of the cause assigned, in every state of the human body; that dejection of spirits, anxiety, sadness, and every symptom of diminished vigour, were the ordinary results of a quick transition from debauch to abstinence. He begged, therefore, *as the life of a*

fellow creature was at stake, and as she had been so late a witness of the good effects resulting from the method of cure, the continuance of which he still recommended; that she would not allow prejudice, and impressions from *false theories* of *physicians*, among whom she had been conversant, to prevail over the high probability of success from this mode of cure." He dismissed her, after obtaining a promise that she would continue the plan of cure in question. The prejudice we have spoken of had prevented her from completely fulfilling her promise; as appeared by the consequence next day: when I went back to the Doctor, and told him that the patient's *raging delirium* was *now over*, in consequence of an *imperfect renewal* of *the stimulant plan of cure;* that he was now seized with a coldness of all his extremities, proceeding rapidly to the more centrical parts of his body. "Now," said he, "is the time to ply the *most powerful stimuli;* as the nurse, from a thorough conviction of this being a symptom of instant death in all the cases that she had ever seen, can possibly have no objection to this plan of cure, after constantly finding every other fail. She might have been afraid of it during the continuance of the delirium; but that apprehension must vanish in the present case, in which it must be natural to her to expect, that exciting the system promises the only cure of a case that must evidently appear to her to depend upon a sinking of the vital energy." She was accordingly very readily prevailed upon to throw in very plentifully the strongest *cinnamon spirit* and *rum*. The effect answered the Doctor's prognosis. Next day the patient was *better*, and never had another relapse.

This case, as might be supposed, made a great *stir* at the time at Edinburgh, and resounded to the praise of Dr. Brown, and discomfiture of the Cullenians, who never dared as much. We, however, much doubt if this practice should be begun at the onset of the disease, whilst the *fomes* of fever lurks in the primæ viæ, and suspect that many have been the victims to this supposed improvement in medicine. We read in the life of Dr. Brown, by Dr. Beddoes, the following opposite fact. A student of medicine died of a low fever, in spite of the full and avowed use of diffusible sti-

mulants. The body was opened; several persons were present. During the examination of the appearances, BROWN, with an air of great sagacity, remarked, that the body was unusually fresh. The dissecting surgeon, whom perhaps kindred devotion to Bacchus had inspired with tenderness for the Doctor, replied, that considering the circumstances, he had scarce seen an instance where putrefaction had made such little progress. "Then, gentlemen," rejoined the doctor, "I appeal to you, whether we may not consider this as a clear proof of the propriety of our practice."

As a specimen of the fervour of BROWN's genius, speaking of the *doctrine of spasms*, he says, "it was first suggested by Van Helmont, and clumsily wrought up into a system by Hoffman, was banished by Boerhaave from the country which gave it birth, "it found at last," he adds, "amidst a new persecution raised against it by the pupils of Boerhaave, then in the possession of the medical chairs at Edinburgh, a friend and protector in Dr. Cullen, who had lately become one of the number of those professors." "This brat," he proceeds, "the feeble, half-vital, semi-production of frenzy, the starveling of strained systematic dulness, the forlorn outcast of the fostering care to which it owed its insect vitality, was now to be pampered by a crude and indigestible nutriture, collected from all the materials which had composed the several fabrications of former erroneous systems, was to be decorated with every foreign plumage, and in this its totally borrowed and heterogeneous form, instead of the hideous caricatura which it was, contrived to excite the derision of mankind, it was to be ostentatiously obtruded upon the world as a new and respectable doctrine, and held up, forthwith, as the formidable rival of a splendid system*." Such is the torrent of metaphors that rushes upon his imagination, when he thinks of the system of his ancient friend and protector.

I have had no experience myself in what is styled the *Brunonian practice* in putrid fever.

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* "Observations on the old Systems of Physic," 1787, p. 31.

THE LATE DR. GEACH's PRACTICE,

SENIOR PHYSICIAN TO THE PLYMOUTH HOSPITAL.

Letter from Mr. Hammic to Dr. Beddoes.

EMPLOYMENT OF CALOMEL AND ANTIMONY.

SIR,

I do myself the honour of communicating to you the following sketch of treatment pursued by my late learned and truly invaluable friend, Dr. Greach, for several years past, in the typhus, low, nervous, contagious, or putrid fever, (as it is generally called,) with great success; an account of which treatment, had he fortunately lived, it was his intention to have published the ensuing summer. The reason of its being prevented we must all most seriously lament; for a treatise issuing from his pen, on the beneficial effects of *calomel* and *antimony* in this disease, would, no doubt, have been so amply stored with facts and observations, as to have rouzed the universal attention of medical men to the subject.

The Doctor used candidly to confess, that he was led to this practice at first, about thirty years since, whilst attending the crew of a large Russian ship, which had been driven into Plymouth in the greatest distress. After encountering several gales of wind, her people, from great fatigue and uncommon exertions, had become very sickly, and the typhus fever raged with great violence amongst them, accompanied with symptoms of great malignity. He then observed that the only men who escaped the contagion on board, were men under the influence of *mercury*. This fact made great impression on him, and ever since that time he has been accustomed to give mercury in such fevers, but not with such freedom till the last seven years of his practice, and for the last five years whilst I had the honour of being an assistant surgeon placed under him in Plymouth hospital. I have seen him prescribe it, and have prescribed it myself under his own immediate eye and controul, whenever any person was seized with this fever in the surgical wards of the hospital; and as I always attended him

during that time in his visits of the wards, the number of cases has been considerable: and I have also seen it very successfully administered in some very alarming cases of *typhus gravior* among the poorer class of inhabitants of Plymouth Dock, and Stonehouse, whom humanity induced him to visit in those places, and to whom he had the goodness to conduct me, in order to be thoroughly convinced of the efficacy of this remedy, and thereby induced, from actual observation, to give this medicine with confidence in my future practice; for the doctor thought this plan only wanted publicity to obtain a preference to those usually employed in such diseases.

The following is only an imperfect outline of the plan, but even as such, I trust it may not be deemed unworthy of your perusal, imperfect, as I have not had access to his notes and observations, but at the same time I pledge myself for its faithfulness.

Whenever the doctor was called to a person labouring under symptoms of typhus fever (if within two or three days of its first attack) he used constantly to prescribe fourteen or sixteen grains of *ipecacuanha*, assisting its operation with chamomile tea; three hours after the cessation of the vomiting (if the patient was delicate), a bolus of *five grains of calomel*, with a scruple of *rhubarb* was given, but if the patient was of a strong habit, a scruple of *jalap*, with eight or ten grains of *calomel*, were administered. If evacuations were not thus produced within eight or ten hours, *castor oil*, or some other laxative, were given occasionally till the desired effect had taken place. The windows of the room were opened in such a manner, that the room was kept perfectly *cold*, without subjecting the patient to a current of air; the bed-curtains nearly all withdrawn, so that free circulation was admitted, even in winter; taking care to have (where it could be procured) frequent changes of linen. After the stools, the following boluses were immediately ordered:—*calomel* two grains, *pulv. antimonial.* three grains, *cons cynosb.* q. s. ut f. bol. to be taken every *six hours* when the symptoms were slight, but when the case was very urgent, or he had not been called in till the fever had made some progress, then the above quantity was given every *four*, *three*, or

even every *two hours*, permitting weak lemonade, tamarind, or cream of tartar water to be taken for the common drink. If the fever still went on, and the patient's strength became exhausted, a little port wine, diluted with water, was allowed; usual quantity half a pint, seldom or never exceeding one pint in twenty-four hours.

To any person unaccustomed to give these boluses, diarrhœa, ptyalism, or vomiting, would naturally suggest themselves as the inevitable consequences in almost every case of their exhibition; but the fact, in a multiplicity of instances, directly proves the reverse; for in general we were obliged to order rhubarb, with kali ppt. or an electuary, made of equal parts of cream of tartar and conserv. cynosb. Ptyalism has seldom, as I have before said, followed their use, notwithstanding they have been continued to some patients every three hours, for a length of time: *but when they did affect the salivary glands, the cure was always certain and more expeditious after that event, appearing to check immediately the progress of the disorder.*

When diarrhœa supervened, the doctor was cautious how he checked that discharge, never attempting it, unless the patient was very feeble or low; for in several instances where numerous stools have been procured, the patients have found themselves relieved of a delirium which had been on them for three or four days before; but when the diarrhœa continued profuse, exhausting the patient's strength, then means were employed for its removal, commonly a scruple of cons. opiat. or an ounce of poppy syrup sufficed: if they did not, half a grain, or a grain of *opium* was combined with the calomel and antimony, but seldom were we necessitated to seek the assistance of opium, and in no other way did the doctor ever administer opium in this disease.

Vomiting, when excited, was commonly allayed by the saline mixture in the state of effervesence; when this symptom much harassed the patient, the antimonial powder was reduced from four to two grains: this was the symptom pursued throughout the whole of the stages of this fever, *never administering any other medicine*, unless any extraordinary occurrence took place; therefore

the whole dependence for a cure may be clearly perceived to be entrusted to the *calomel* and *antimony*.

In some few cases, when delirium was great, and the head much affected, a blister was applied to the nape of the neck; as soon as signs of amendment appeared, the boluses were discontinued, and not till then; and a decoction of bark, with bals. tolu, was given; but the bark, in substance, was never given by the doctor; for the bad effects of it in this form, when exhibited to weak stomachs, far outweighed, in his opinion, any good it ever produced. It is well worthy of remark, that in all those cases where the symptoms were very urgent, and the putrid appearances more apparent, that there the boluses scarcely ever were observed either to ruffle the bowels or stomach.

Now, Sir, after the above statement, it may be expected that there was some theory to defend this innovation of practice, and that I ought, after troubling you in this manner, to attempt accounting for the modus operandi of this medicine, which, in a variety of instances, I freely confess myself incompetent to accomplish, and even were I capable, unwilling; for in theory we may be overthrown in various ways, but in the above account we never can; for who can overthrow us *when truth is our foundation?* Feel assured, Sir, this was the mode of practice pursued by Dr. Geach in those cases, not only in this hospital as first surgeon, but also in a most extensive range of private practice, and of course nothing but the success attending it, could have induced him to persevere in a treatment so widely different from that pursued by other practitioners.

I beg leave to state, that my father, about five years since (in the absence of the physician), at the recommendation of Dr. Geach, pursued the above plan with very great success, in a number of cases of *typhus gravior*, received into this hospital from his Majesty's ship Squirrel, on board of which ship the fever had been so violent, that the Board of Admiralty gave an order for destroying the bedding and clothes of the men, supplying them anew at Government's expense, and also, that my friend, Mr. John Fryer, visiting Assistant Dispenser at this hospital, who, when a fever o-

the worst species of typhus was raging among the French prisoners confined at Mill-Prison, Plymouth, about three years since, and at a time when most of the assistants there employed were confined by the fever, nobly and humanely volunteered his services, found that *calomel* and *antimony* triumphed over this common foe to all.

THE PRACTICE OF DR. RUSH, AT PHILADELPHIA.

CALOMEL ALONE.

During the course of my extensive practice, says Dr. Rush, the exhibition of calomel purges produces frequently *salivation*. By this accidental effect of mercury, I was taught to administer it with other views than merely to cleanse the bowels, and with a success which added much to my confidence in the power that this medicine has over putrid fever. I began by prescribing the calomel in small doses, at short intervals, and afterwards I directed large quantities of the ointment to be rubbed upon the limbs. The effects of it, in every case where the mouth was affected, was very salutary and speedy, and even several persons appeared to be benefited by the mercury introduced in the system in the form of an ointment, where it did not produce salivation. In the month of October, adds Dr. Rush, I attended a gentleman in a bilious fever, which ended in many of the symptoms of a typhus mitior. In the lowest state of his fever, he complained of a pain in his right side, for which, I ordered half an ounce of mercurial ointment to be rubbed on the part affected. The next day he complained of a sore mouth, and in the course of four and twenty hours, he was in a moderate salivation. From this time his pulse became full and slow, and his skin moist. His sleep and appetite suddenly returned, and in a day or two he was out of danger. The second precedent for a salivation in a fever, which occurred to me, was in Haller's short account of the works of Dr. Cramer*, and which I

* Bibliotheca Medicinæ Practicæ, vol. iii. p. 491.

had a year before copied into my note book. The practice was, moreover, justified in point of safety, as well as the probability of success, by the accounts which Dr. Clark has lately given of the effects of a salivation in the dysentery*. I began by prescribing the calomel in small doses, at short intervals, and afterwards I directed large quantities of the ointment to be rubbed upon the limbs. The effects of it in every case in which it affected the mouth, were salutary. Dr. Woodhouse improved upon my method of exciting the salivation, by rubbing the gums with calomel, in the manner directed by Mr. Clare. It was more speedy in its operation in this way than in any other, and equally effectual. Several persons appeared to be benefited by the mercury introduced into the system in the form of an ointment, where it did not produce a salivation. Among these were the Rev. Dr. Blackwell, and Mr. John Davis.

Why should not pestilential infection have its antidote, as well as other poisons equally fatal? "They have narrow conceptions, not only of the Divine Goodness, but of the gradual progress of human knowledge, who suppose that all pestilential diseases shall not, like the small-pox, sooner or later cease to be the scourge and terror of mankind †," says Dr. Rush; who adds, "let the knowledge of this salutary innovation in medicine be generally diffused; let the confidence it merits be placed in it; let the destructive dogmata of theorists be discarded, and no more will Pestilential Fevers be numbered among the widest outlets of human life ‡.

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* Diseases of long voyages to Hot Climates, vol. ii. p. 334.

† Rush's Account of the Bilious Yellow Fever, p. 327. A work of the greatest merit, and filled with the most benevolent views towards mankind.

‡ Ibid. p. 329.

THE PRACTICE OF DR. CHISHOLM.

CALOMEL AND OPIUM.

From long experience I have found that the bark in substance is extremely disagreeable to patients labouring under *typhus fever*, and the irritability of the stomach at the period when it became necessary is so great, as very frequently to baffle every attempt to render it retentive. Nature, therefore, seemed to point out the impropriety of administering the bark, by not only rendering the palate abhorrent to it, but exciting such a degree of spasm in the stomach, as made that organ totally unequal to even the reception of it. Hence we are not to be surprised that the bark did so little in this fever. In fact, except in the third, and part of the second stage, it was not a medicine to be depended on; and even in these, the success was obtained chiefly by the agency of other medicines in restoring some degree of tone to the stomach.

Before I conclude this part of the task I have imposed on myself, I cannot help observing, that as the majority of the most useful part of society are daily exposed to the ravages of one of the most destructive calamities mankind are subject to, we have reason to consider ourselves as extremely fortunate in possessing a remedy which, under certain circumstances, may be depended on in the cure of contagious fever. There is, no doubt, the influence of old habits, and medical authority are to be combated, ere the practice I have recommended can be generally adopted; but it is to be hoped that these will yield to facts and experience, the physician's only certain guides in the treatment of disease.

The following year this pestilential fever broke out afresh. On the re-appearance of this disease, I was determined, says Dr. Chisholm, to give the calomel earlier, and in much greater quantity than the preceding year. Accordingly, instead of preceding the administration of this excellent remedy with the usual evacuating medicines, I began with it, and continued it without the

interposition of any other, till salivation took place. *The success attending this practice exceeded my most sanguine expectation; so great indeed was it, that I did not lose a single patient in whose case it was pushed to the full extent.* My practice will, no doubt, by many be considered as unwarrantably bold; but as its *wonderful success* has been now experienced by several other practitioners, who can bear testimony to it, I feel not the smallest hesitation in recommending it with all the fervor which an earnest wish to save the lives of men, and the fullest conviction of its power, can give rise to.

My present mode of using the calomel, is to give ten grains to an adult patient as soon as possible after I see him. This generally acts as an aperient in the degree required, about an hour or two after it is given. At the end of three hours I repeat the same dose without opium, if the first has not purged more than twice. At the end of three hours more, the same quantity is given, adding opium or not, as the preceding doses have acted. In this manner ten grains are given every three hours till the salivary glands become affected; which generally happens in less than twenty-four hours from the commencement of the treatment. The effect of the medicine given in this manner, may be perceived after the third dose in general; *the patient becoming calmer, less restless, less anxious; his skin being softer, and possessed of an agreeable heat; the stomach being perfectly retentive, however irritable it might have been before; and the eyes recovering their former lustre and sensibility.* When, at length, *salivation* takes place, the patient is left *free from disease*, with a moderate warm moisture on his skin; and very soon after, signs of returning health are indicated by calls for food, &c. The recovery of strength is proportionally rapid to that from disease; nor is it at all necessary to have recourse to *bark*, or any other medicine whatsoever: a circumstance truly gratifying both to the patient and physician, in a disease wherein Nature revolts at the very idea of it. In fact, *calomel* is the only medicine, except the occasional addition of opium, I have latterly given; of course the practice has been as *simple* as it has been *efficacious:* an additional encouragement to

the unhappy sufferer, and to those whose situation may render them liable to receive the pestilential infection.

DR WOOD'S PRACTICE, OF NEWCASTLE.

EMPLOYMENT OF NITRE.

SINCE the discovery, that mercurial oxyds (mercury combined with OXYGEN) is of great efficacy in the cure of putrid fever, another remedy has been much recommended by Dr. Wood, of Newcastle; namely, NITRE.

From the accurate observations which have been lately made, says this ingenious physician, on the effects of VITAL AIR on the blood, both in the state of circulation, and when drawn from a vein, and allowed to cool; from the difference of colour of the returning blood with that which has just passed through the lungs; and from our knowledge, that the red globules are oxydes; and from the similar appearance which the blood, in a person labouring under typhus, has with the returning venous blood; and from the anxiety of respiration, which they who labour under typhus fever always discover,—we can have little doubt, I think, for supposing that the deficiency of OXYGEN is the cause of the symptoms of typhus, the principal of which are, besides those abovementioned, universal debility, and a rapid tendency to a putrescent state. Hence we may conclude, that OXYGEN is the general and only corrector of this state, that it is the grand antiseptic of nature, and therefore, with the decrease of OXYGEN, will increase the tendency to putrefaction, and with the increase of the tendency to putrefaction, will the *irritability* be exhausted, and symptoms of *debility*, in both body and mind, be progressively evident.

The proximate cause of typhus fever can therefore only be removed, as must appear from what has preceded, by the application of OXYGEN in a sufficient quantity to correct this deficiency, and to restore the state of equilibrium. OXYGEN taken into the stomach in the combined state of many different *acids*, may answer this intention; but in the state of *nitre*, it seems to

me the most powerful form of exhibiting it; the process for obtaining OXYGEN in the state of *gas*, in order to throw it into the system by the lungs, is not only tedious but difficult. The happy period in which this can be accomplished is, however, at last arrived. In the state, therefore, of combination with *nitre*, it appears to me at present the most effectual mode of throwing it into the system. I have lately, continues Dr. Wood, exhibited *nitre* to more than fifty patients labouring under typhus; many of whom, when I saw them, had all the symptoms of this disease in a most violent degree. I did not give any previous antimonial; but I exhibited immediately the solution of *nitre*. The formula usually employed was,

R. Nitri purificati, dr. 1½
Aq. distillatæ, unc. 7.
Solve salem, et adde syr. sacchari albi, unc. 1.
Tincturæ lavendulæ comp. dr. 2.
F. Mist. cap. una vel ducæ unciæ, secunda, vel tertia, quaque horâ.

That is,

Take of purified nitre, one drachm and a half
Common water, seven ounces
Dissolve the salt, and add simple syrup, an ounce
Compound spirit of lavender, two ounces.
For a mixture—Take one or two ounces every second or third hour.

I have tried to improve this mixture, by adding the juice of lemon instead of the distilled water, which neutralizes the pot-ash, and very greatly encreases the oxygenous virtues of the mixture.

In some of the patients, the pulse, which was from 100 to 130, was diminished in frequency, and increased in strength, before the expiration of the first 24 hours; the change, indeed, was often so great and sudden, that I could scarcely credit my own senses, until repeated experience stampt the firmest conviction upon my mind.

Previous to the practice which I now pursue, adds Dr. Wood, I never visited in Typhus, without experiencing some of those feelings which the physician is obliged to suffer, who expects an unsuccessful issue; but now I have no fears, and I trust that one of the most crowded avenues to the grave is at length closed; and judging, from the rapid progress acquired in the knowledge of philosophy and medicine within a very few late years, I may venture to predict, that by similar attempts, every disease, whose nature is at present obscure, will be at last clearly explained, and the professors of medicine be finally in possession of the *ne plus ultra* of their science.*

DR. THORNTON's PRACTICE WITH VITAL AIR.

In Dr. Beddoes' Considerations of the medicinal powers of factitious air† we have the following communication from Dr. Thornton, in a letter to that patriotic physician.

DEAR SIR,

It seems reserved for the honour of the present enlightened age, to discover a scientific and successful method of treating putrid fever. The contagion has been represented as a stimulus exhausting the irritability of the system, which depends upon the *oxygen* in the blood; and a method of cure hypothetically deduced was to supply *this* as fast as it was *consumed* by *the excessive and morbid stimulus.* You justly reprobate the common practice of drenching patients, labouring under typhus, with wine and opiates, until they are not unfrequently stimulated to death. "If I have imputed the debility," you say, "to its real cause, our chief aim should be to restore *the principle of excitability*; and stimulants

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* Vide Wood on stimuli, with a view of explaining the cause and treatment of putrid fever, a work which claims for the ingenious author the highest praise.

† See Part IV. and V. of this interesting work.

should in the mean time be exhibited with a more sparing hand." Under this persuasion I have conducted my practice, and with what success the present cases will disclose.

John Lewis, chairman, living at No. 42, Compton-street, was seized with head-ache; rigors, terminating in violent sweat; great thirst; a very unpleasant taste in his mouth; delirium at night; a sense of burning in the region of the stomach; spirits exceedingly depressed; so weak as to feel his legs sink under him; his countenance was extremely vacant; his answers were incoherent; he complained of incipient deafness; being desired to put out his tongue, it appeared coated, and very brown; and there was a crackling noise in respiration; the pulse was feeble, tense, and very quick. In order to diminish the excitement, I directed an emetic, to be succeeded by a cathartic. The former was repeated twice; the latter every night.

To impart *oxygen* to the blood, which was consuming by the excess of morbid stimulus, I made him inhale each day ten quarts of vital air to thirty of atmospheric; and besides *oxyd* emetics and aperients, I gave him *nitre*; adding a little bark and myrrh to keep up his strength.

From my journal it appears, that he progressively grew better, and in a fortnight was restored; when, by my advice, he went into the country. In another case I combined the *acetum nitrosum* (nitrous acid) with the happiest effect.

I am, &c.

R. J. THORNTON.

In the Philosophical Magazine we have also the following interesting cases.

After attending a family labouring under putrid fever, I was seized myself, says Dr. Thornton, with the same fever, but it was prevented forming by an emetic and calomel cathartic. It assailed next my wife, who being advanced in pregnancy, the same remedies could not be employed, and the fever actually formed itself. The symptoms became so alarming, that mustard cataplasms were applied to the feet, and there arising, towards the

close of the disease, violent startings of the tendons, and a cold clammy sweat, with a fluttering and sunk pulse, I was induced to make trial of the *oxygen air* nearly in a pure state, and my wife was immediately *revived* by this remedy, and after a fever, which lasted one and twenty days, she recovered. A servant in the house, and a nurse, were next seized, and I had the maid taken out of bed, and made her inhale thirty quarts of vital air, mixed with twice that quantity of atmospheric, which being repeated for a few days, she was completely *restored*. The nurse had an emetic and went home. My two children were afterwards seized with the same fever, and being declared by the gentleman who attended them, past all hopes, I ordered a carriage to be procured, and took them immediately to the top of Highgate Hill, where they were composed to sleep by the keen country air, and came home greatly mended, which excursion being repeated daily, they both recovered, to the surprize of every one. Seeing the good effects of *air*, and of the factitious *oxygen air*, I adopted both in the fullest manner in the instance about to be recorded, the result of which the reader will see from the following letter:

Letter from Mr. Corpe, Surgeon, to Dr. Thornton,

Barnet, June 11, 1799.

DEAR SIR,

My daughter was taken the 27th of February, 1798, with chills, followed by shiverings, considerable loss of strength and depression of spirits. She continued suffering much from chills for about four or five hours, after which she complained of heat and flushing in her face, not attended with much thirst, and was a little delirious that night. The next day the symptoms increased, and the debility was so great, that I was obliged, after the first passages had been thoroughly cleansed, to have recourse to wine and bottled porter, together with cordial antiseptic medicines; which plan was pursued under your direction during the progress of the disease; towards the close of which, the poor child was so shockingly debilitated, that we expected every minute would be her

last, which induced you to direct *vital air**, by which, and the constant use of strong vinegar thoroughly sprayed with a hearth-brush all over the room and curtains of the bed, revived her astonishingly; but the manner in which she constantly revived, after inhaling the *vital air*, must be chiefly attributed to it, as the vinegar had been used in the way before-mentioned almost from the very beginning of the disease, and was, I believe, not only of great use to the patient, but prevented the fever spreading in my family. No poor human being, I believe, ever had a narrower escape from death, and I shall always feel myself under the highest obligations possible to you for your attention and extraordinary skill in restoring my dear child, with God's assistance, to,

Dear Sir,

Your much obliged and faithful Servant,

JOHN CORPE.

P. S. I had almost forgot to observe, that the door and windows of my dear child's room were kept almost constantly open, and being exactly opposite to each other, naturally created a free circulation of fresh air.

OBSERVATIONS ON THIS CASE BY DR. THORNTON.

This patient, when I saw her, was convulsed, and the nurse said, "That if it was her child, nothing more should be given." Even her mother requested, "if there really was no hopes, that she might not be disturbed by medicine." What increased the alarm was, a tradesman a few doors off, had lately died of this same fever, under two eminent physicians, leaving behind a widow and six children. The case, indeed, seemed deplorable, but despair should never be allowed while there is life, and it authorized the

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* Sixteen quarts of vital air, mixed with the same quantity of atmospheric air, were administered in the evening.

exhibition of the *vital air*, which undoubtedly contributed much to the saving of the life of this amiable young lady.

III.—INTERMITTENTS.

ZINC, AND CUPRUM AMMONIATUM.

In some cases of intermittents, which have continued a great length of time, owing to their having been entirely neglected in their beginning, or where the cinchona has failed to procure the desired effect, preparations of iron and copper have been administered with success. The oxydum zinci given in the dose of two grains thrice a day, has removed obstinate intermittents, when the usual remedies have failed.

The sulphas zinci has likewise been administered with much success. The sulphate of copper given in doses of a quarter or half a grain every four or six hours, is also said to have proved very efficacious in some cases of obstinate intermittents. As a tonic, the cuprum ammoniatum* has been given with advantage. All these may be employed along with a decoction of the cinchona, or any of the other tonic bitters which have been mentioned.

ARSENIC.

Arsenic has been strongly recommended by Dr. Fowler for intermittents, and it is undoubtedly a very powerful medicine, for I have found it to remove obstinate intermittents which had long resisted all other means. The inhabitants of a considerable portion of the country which surrounds Salisbury (the place of my residence) are very subject to these fevers, but I have never yet been disappointed in removing even those of an obstinate nature,

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* R. Cupr. Ammoniat. scr. 1.
Mic. Panis dr. 2.
Syrup. Cort. Aurant. q. s. M. fiant pilul. N° xxiv. Capiat 1. *vel* 2.—3, (sensim augendo dosem) hora decubitus quotidie.

by a proper use of arsenical solution; it is however my constant practice to conjoin four or five drops of tinctura opii with each dose of it.

The late Dr. Fowler seems to have been the first physician who advised this medicine in agues, and on his recommendation many practitioners have used it, agreeably to his directions, with the most pointed success. The preparation he advised is now introduced into the London Pharmacopœia, under the name of Liquor Arsenicalis. The dose is from two to twelve drops, once, twice, or oftener in the day, according to the age, strength, &c. of the patient. Eight days administration of the medicine, in the manner just mentioned, will generally be found sufficient for the radical cure of an intermittent.

Vomitings, gripings, swellings, and the loathing of food, are the troublesome symptoms now and then produced by an improper use of the arsenical solution. They however disappear generally on a discontinuation of the drops, or only require the exhibition of gentle opiates, or some warm cathartic, such as the tincture of rhubarb.

From the observations which have been made on the use of arsenic in agues, there seem just grounds for believing it to be the most powerful of all the medicines which have been recommended in these complaints. In Lincolnshire, which is a fenny country where agues are very prevalent, it is universally used, and with the most uniform success. Military and naval surgeons will find the arsenical solution a valuable substitute for the bark of cinchona, when their store of this is small or exhausted. Arsenic has long been administered by empirics with the greatest success in intermittents, under the appellation of the ague-drop.

The manner in which arsenic acts in curing intermittent fevers, Dr. Darwin thinks, cannot be by its general stimulus, because no intoxication or heat follows the use of it; nor by its peculiar stimulus on any part of the secreting system, since it is not in small doses succeeded by any increased evacuation or heat, and must therefore exert its power on the absorbent system. He suspects its success in the cure of intermittents to depend on its stimulating

the stomach into stronger action, and thus by the association of this viscus with the heart and arteries prevents the torpor of any part of the sanguiferous system.

A combination of the arsenical solution with cinchona* in substance, decoction, or infusion, is likely, I think, to prove a valuable remedy in cases of obstinate intermittents, and where either of these medicines administered singly might fail.

Dr. Fowler, in his Reports on the use of *arsenic*, has the merit of having ascertained the limitations under which it ought to be prescribed, and of having fully established its efficacy in curing intermittent fevers. He prepares it in the following manner: sixty-four grains of the oxide of arsenic are reduced to a fine powder, and mixed with an equal quantity of potash, which is added to half a pound of distilled water in a Florence flask, and placed in a sand heat, where it is gently boiled till the arsenic is completely dissolved; to this solution, when cold, half an ounce of compound spirit of lavender is added, and as much distilled water as makes the whole amount to a pound. A grain of the arsenic is contained in one hundred and sixty drops, or two drachms of the solution; and one grain, or three-fourths of a grain, will in general radically cure the ague. The dose from two to seven years of age is from

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* R. Liquoris. Arsenical. Min. g^{tt}. 3.—12.
Decoct. Cinchon. dr. 10.
Tinct. Cort. Aurant. dr. 2.
——— Opii Min. 5. M.
ft. Haustus ter in die sumendus.

Vel

R. Infus. Rad. Calumb. dr. 12.
Liquor. Arsenical. Min. g^{tt}. 4.
Tinct. Opii g^{tt}. 7.
——— Cinchonæ C. dr. 1. M.
ft. Haustus 4ta vel 6ta quaque hora capiendus.

two to seven drops; from eight to eighteen years and upwards, is from seven to twelve drops three times a-day. In cases of ague, the preceding doses, according to the age of the patient, are to be administered three times a-day for five days; at the end of which, the fits being suspended, the use of the medicine is to be omitted for two or three days, and then repeated three days more, in order to prevent a relapse. The medicine, when ordered three times a day, is to be taken at six o'clock in the morning, two o'clock, and ten; and when twice a-day, at ten in the morning and ten in the evening; and these hours are to be adhered to, whether they coincide with the paroxysm or not. Dr. Fowler draws the following conclusions, from an extensive experience of the benefits derived from this medicine.

"1st, That this mineral solution is an efficacious and valuable remedy in the cure of agues.

"2d, That in proportion to the number of cases in which it has been tried, it appears to be equally successful in remitting fevers, and in periodical headachs.

"3d, That being tasteless, it may often be conveniently and successively exhibited to children, and certain adults, who cannot be prevailed upon to take the Peruvian bark, from its bitterness, or other medicinal qualities.

"4th, That from its general efficacy, it is highly probable it will prove successful in most cases wherein the Peruvian bark shall fail in producing its usual effects.

"5th, That although its curative virtue will be obvious in almost every case of ague, the paroxysms, in a number of instances, will only be relieved or suspended for a certain time.

"6th, That a very frequent cause of the failure of the medicine is owing to its operative effects proving troublesome, and thereby not permitting a regular course of its administration.

"7th, That the operation of the medicine on the bowels, as a cause of failure, may frequently be obviated by the assistance of small doses of liquid laudanum."

Although several respectable practitioners have corroborated Dr. Fowler's report of the virtues of this medicine, there are some

considerations which show that it should not be employed without the utmost caution, and perhaps only where other medicines more safe in their operation have proved unsuccessful. Its use, particularly if continued for any length of time, has sometimes occasioned excessive vomiting, severe griping, wasting, headachs, tremors, &c. It is also, like digitalis, and mercury. apt to be accumulated in the body, and to produce alarming and unexpected effects. Hence Sir G. Baker has observed, that an intermittent is less formidable than arsenic itself.

THE TOURNIQUET.

In the Medical Commentaries for the years 1794 and 1797, published by Doctor DUNCAN, we are informed by Mr. George KELLIE, an ingenious naval surgeon, of the good effects of compression by the tourniquet, in stopping the cold fits of intermittents, and several instances are related of this curious fact. The plan pursued by him was to apply the instrument on one thigh and on one arm of opposite sides, at the same time. In two minutes after the application of the tourniquet, the shaking and other symptoms of the cold stage entirely ceased, a mild hot stage was immediately induced, and the patient found himself quite relieved. After suffering the instruments to remain on for about fifteen minutes, they were removed, and the cold symptoms did not return.

From various trials which Mr. KELLIE made, he concludes, first, that if at any time during the cold fit of an intermittent, tourniquets be so applied as to obstruct the circulation in two of the extremities (for example, one on the subclavian, and the other on the iliac of opposite sides), the hot fit will be induced in about three minutes afterwards: secondly, that if the tourniquet be applied previous to the accession of the paroxysm, the cold stage will be entirely prevented: and thirdly, that where the cold stage of an ague is either thus shortened, or altogether prevented, the following hot stage will be rendered both milder and of shorter duration.

ÆTHER.

Sulphuric æther administered in the quantity of a drachm for a dose, on the approach of the cold fit of an intermittent has been found in some instances to prevent the accession of the hot one. In the fifth volume of Medical Facts and Observations, two cases are recorded by a Mr. DAVIDSON of the efficacy of this remedy, where the bark and other medicines which were previously used had failed. The first dose is not to be expected to remove the disease at once, and therefore on the approach of the next fit it ought to be repeated. During the intervals, the bark and other tonics are to be taken.

ROLLERS, LAUDANUM, AND ÆTHER.

With this view I have myself bandaged persons with rollers over the arms, legs, and thighs, before the accession of the cold fit, giving *laudanum* and *æther*, then removed the ligatures, and in this way, cured agues which before had resisted the bark.

ON FUMIGATION.

In the year 1780, a putrid fever broke out among the Spanish prisoners confined in Winchester castle; he embraced this opportunity of giving *fumigation* a fair trial, and obtaining the most decisive evidence of its happy power in preventing the spreading or farther communication of the infection. He found he could use it without risk or inconvenience to respiration, and therefore thought it the most proper antidote to be applied, where persons are unavoidably obliged to be present.

At the suggestion of Dr. Smyth, important experiments were made by desire of the Lords of the Admiralty, with the *nitric acid vapour*, on board the Union hospital-ship in November 1795, to correct the contagion of a very malignant fever which had made great ravages among the crews of the Russian ships at Sheerness; the success of which was so complete, as not to leave the least reason to doubt of the high efficacy of this fumigation. Many subsequent trials have confirmed this opinion, and have in-

duced the House of Commons to vote a reward to Dr. Smyth for his valuable and easy method of destroying the contagion of infectious fevers.

The Doctor's mode of obtaining nitric acid gas is by decomposing nitre by means of heated sulphuric acid, which may be done as follows: Put half an ounce of this acid into a crucible, glass, china cup or saucer, and warm this over a lamp, or in heated sand, adding to it, from time to time, some nitre: these vessels he directs to be placed at twenty or thirty feet distance from each other, according to the height of the ceiling, and the virulence of the contagion. In hospitals and prisons, he advises the lamps or vessels containing heated sand to be placed on the floor; but on board of ships, he recommends to hang them to the beams by waxed silk cords.

From the well-known efficacy of the sulphuric acid in destroying contagion, he advises it to be employed as a fumigation for clothes and furniture, &c.; but for purifying empty prisons, hospital wards, and ships, he gives the preference to the nitric, its vapour being more volatile and penetrating, and not leaving the disagreeable smell which the sulphuric does, and thinking it at the same time equally efficacious.

Monsieur Guyton Morveau, in his Treatise on the Means of purifying infected Air, claims the merit of being the discoverer of the power of the mineral acids to destroy contagion, and endeavours to establish the superiority of the muriatic acid over all others. Upon a full investigation of the matter it appears however, that the power of the mineral acids to destroy contagion was known to Sir John Pringle as early as the year 1750, and their utility for that purpose was mentioned by Dr. Johnstone in his pamphlet published in 1758, in which we are told that the vapour of muriatic acid was successfully employed by him in correcting the contagion of a very malignant fever, which had raged at Kidderminster two years before that period.

Dr. Smyth has also claimed the having been the first who used the mineral acid gases in the apartments of the sick, and has alleged that they never had been employed by Dr. Johnstone, but

in places where no one was present, or whence the sick were removed. This opinion has been refuted by Dr. Johnstone's son, and the invention of his father most incontestably established *. What Dr. Smyth seems therefore entitled to is the merit of having brought the discovery into *public notice*, and of having applied and extended it to general use.

It seems of little consequence whether we employ the nitric acid or the muriatic in the form of gas for the purpose of destroying contagion and purifying infected air, as the powers of both are extensive and certain. The muriatic is however thought to be more diffusible than the other. When we give it the preference, it may be used in the following manner: Put one pound or a large handful of common salt into an earthen vessel, and pour over it from time to time a small quantity of sulphuric acid, till the whole salt is moistened. If the air is foul and peculiarly offensive, apply a gentle heat under the vessel, to extricate a larger quantity of vapour; but in general, the simple addition of the acid to the salt will be found sufficient, unless the apartment is very large.

The most effectual, however, of all fumigations, is perhaps the following, but it requires some nicety. Take of manganese in powder two parts, the same of common salt, of sulphuric acid three parts, and of water one part. Put an ounce of the mixed manganese and salt into a bason, add of water a large tea-spoonful, then, drop in half a tea-spoonful of sulphuric acid, and repeat this till you have used a tea-spoonful and a half of the acid. In this manner keep up a sensible extrication of the fumes.

On the appearance of typhus or any infectious disorder in a gaol, hospital, workhouse, garrison, transport-ship, or any other place where many persons are crowded together, we should not fail to advise one of these gaseous fumigations in every room, in addition to a free ventilation and the greatest cleanliness. The same steps should be adopted in academies, boarding-schools, and even our dwelling-houses.

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* See Dr. Johnstone's Reply to Dr. Smyth.

THE PLAGUE.

PESTIS.

OF THE SYMPTOMS OF THE PLAGUE.

Dr. Cullen has placed this disease in the third order of his Nosology, Exanthemata, or Eruptive Fever, but it follows best after Typhus Fever.

The Plague is a disease which always arises from contagion; which affects many persons about the same time; proves fatal to great numbers; generally produces fever; and, in most persons, is attended with *buboes* or *carbuncles*.

These are the circumstances which, taken together, give the character of the disease; but it is accompanied with many symptoms almost peculiar to itself, that, in different persons, are greatly diversified in number and degree, and should be particularly studied. I would wish to lay a foundation for this; but think it unfit for a person who has never seen the disease to attempt its particular history. For this, therefore, I must refer to the authors who have written on the subject; but allowing those only to be consulted, who have themselves seen and treated the disease in all its different forms.

From the accounts of such authors, it appears to me, that the circumstances which particularly distinguish this disease, and especially the more violent and dangerous states of it, are,

1*st*. The great loss of strength in the animal functions, which often appears early in the disease.

2*dly*. The stupor, giddiness, and consequent staggering, which resembles drunkenness, or the headach and various delirium; which are all of them symptoms denoting a great disorder in the functions of the brain.

3*dly*. The anxiety, palpitation, syncope, and especially the weakness and irregularity of the pulse, which denote a considerable disturbance in the action of the heart.

4*thly*. The nausea and vomiting, particularly the vomiting of bile, which shows an accumulation of vitiated bile in the gall-bladder and biliary ducts, and from thence derived into the intestines and stomach; all of which symptoms I suppose to denote a considerable spasm, and loss of tone, in the extreme vessels on the surface of the body.

5*thly*. The buboes or carbuncles, which denote an acrimony prevailing in the fluids. And,

Lastly. The petechiæ, hemorrhages, and colliquative diarrhœa, which denote a putrescent tendency prevailing to a great degree in the mass of blood.

From the consideration of all these symptoms, it appears, that the plague is especially distinguished by a specific contagion, often suddenly producing the most considerable symptoms of debility in the nervous system or moving powers, as well as of a general putrescency in the fluids; and it is from the consideration of these circumstances as the proximate cause, that I think both the prevention and cure of the plague must be directed.

METHODS OF PREVENTION.

With respect to the *prevention:* As we are firmly persuaded that the disease never arises in the northern parts of Europe, but in consequence of its being imported from some other country; so the first measure necessary, is the magistrates taking care to prevent the importation: and this may generally be done by a due attention to bills of health, and to the proper performance of quarantines.

QUARANTINE OF PERSONS.

With respect to the latter we are persuaded, that the quarantines of persons *may safely be much less than forty days;* and, if this were allowed, the execution of the quarantine would be more exact and certain, as the temptation to break it would be in a great measure removed.

QUARANTINE OF GOODS.

With respect to the quarantine of goods, it cannot be perfect, unless the suspected goods be *unpacked* and *duly ventilated,* as well as the other means employed for correcting the infection they may carry; and, if all this were properly done, it is probable that the time commonly prescribed for the *quarantine of goods* might also be shortened.

CONFINEMENT TO A PLACE FOR QUARANTINE.

A *second* measure, in the way of prevention, becomes requisite, when an infection has reached and prevailed in any

place, to prevent that infection from spreading into other places. This can be done only by preventing the inhabitants, or the goods of any infected place, from going out of it, till they have undergone a proper quarantine.

AVOIDING INFECTION OF PERSONS OR GOODS.

The *third* measure for prevention, to be employed with great care, is to hinder the infection from spreading among the inhabitants of the place in which it has arisen. The measures necessary for this, are to be directed by the doctrine laid down in the next section; and from that doctrine, we infer, that all persons who can avoid any near communication with infected persons or goods, may escape the infection.

GENERAL ORDINANCES.

For avoiding such communication, a great deal may be done by the magistrate: 1. By allowing as many of the inhabitants as are free from the infection, and not necessary to the service of the place, to go out of it.—2. By prohibiting all assemblies, or unnecessary intercourse of the people.—3. By taking care that necessary communications be performed without contact.—4. By making such arrangements and provisions, as may render it easy for the families remaining, to shut themselves up in their own houses.—5. By allowing persons to quit houses in which an infection appears, upon condition that they go into lazarettoes.—6. By ventilating and purifying, or destroying, at the public expence, all infected goods.—Lastly, 7. By avoiding hospitals, and providing separate apartments for infected persons.

The execution of these measures will require great authority, and much vigilance and attention, on the part of the magistrate; but it is not our province to enter into any detail on the subject of the public police.

OF NURSES.

The *fourth* and last part of the business of prevention, respects the conduct of persons necessarily remaining in infected places, especially of those obliged to have some communication with persons infected.

TREATMENT.

The cure must be conducted as *Typhus gravior*, or from reports of those who have written on those diseases.

He recommends for this purpose an *emetic* at the beginning of the disease, then a *purge* for drawing off the bile, and then recommends *sweating*, which is to be continued at least twenty-four hours, or longer if the patient will bear it. This is best promoted by the use of acid drinks, and the best remedy is that of Dover's powder (pulv. ipecacuan. comp.) If notwithstanding the use of emetics, purgatives, and sudorifics, the disease still continues, we must then employ tonics, the best of which is the *Peruvian bark*, the exhibition of which has been treated of before.*

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* The best practical book on the plague is that written by Dr. Russell.

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN.

In Dr. Duncan's Annals of Medicine for 1797, is inserted an article relating to the cure and prevention of the plague by frictions of the whole surface of the body with olive-oil, and communicated, as we are given to understand, by George Baldwin, Esq. his Britannic Majesty's agent and consul-general in Egypt.

It is mentioned, that there is no instance of the person rubbing a patient having taken the infection; but, by way of precaution, it is advised to anoint himself all over with oil, and to avoid receiving the breath of the infected person into his mouth and nostrils. The prevention to be used in all circumstances, is that of carefully anointing the body, and living upon light and easily digestible food.

A striking observation made by Mr. Baldwin is, that among upwards of a million of inhabitants carried off by the plague in Upper and Lower Egypt, during the space of four years, he could not learn that a single oilman, or dealer in oil, had suffered.*

Mr. Jackson, in his Reflections on the Commerce of the Mediterranean, likewise informs us, that in the kingdom of Tunis, where the plague frequently rages in the most frightful manner, destroy-

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* It has been said, that when the plague raged in London about two hundred years ago, the dealers in pitch, tar, and tobacco, were particularly observed to escape the contagion.

ing some thousands of the inhabitants, there never was known an instance of any of the coolies or porters who work in the oil-stores, being in the least affected by this disorder, their bodies being always well smeared with the oil, as well as their clothes being imbued with it.

The evidence produced in behalf of the plan communicated by Mr. Baldwin, seems more satisfactory as to the preventive powers of the application, than as to its sanative properties after the disease has once taken place. It seems, however, right to notice, that Dr. Assalini, who was a medical officer in the French army which invaded Egypt, makes a favourable mention of oily frictions in his Observations on the Plague, as being generally followed by copious sweating; and to this he thinks, their beneficial operation is to be attributed. We are also told by Mr. Jackson *, that he recommended the remedy to several Jews and Mussulmen during the time that the plague was depopulating West Barbary in 1799 and 1800, and no instance of its failure when duly persevered in, even after infection had manifested itself, had come to his knowledge.

Dr. Falconer recommends the external use of cold water in the manner pointed out by the late Dr. Currie of Liverpool, and noticed under the head of Typhus Gravior.

Savary in his Letters on Egypt, mentions an anecdote which is considered by Dr. Falconer as much to his purpose. The captain of a ship, whose sailors had contracted the plague at Constantinople, caught it himself by attending on them: he felt, as he expressed himself, excessive heat, which made his blood boil: the disease seized his head, and he perceived (as he thought) that he had only a few moments to live. The little remaining reason he had, taught him to attempt an experiment; he laid himself down quite naked on the deck; the heavy dews that fell, penetrated, according to his sensations, to his very bones. In a few hours he could

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* See his Account of the Empire of Morocco.

breathe better; his agitated blood became calm, and bathing the morning after in the sea, he was perfectly cured.

To this case may be added another of a French soldier, reported by M. Desgenettes, who being afflicted with the plague, threw himself into the Nile under a high degree of delirium, and on being taken out of the water after a short lapse of time, soon recovered from the disease, seemingly in consequence of his immersion.

YELLOW FEVER.

Mercury has been chiefly employed in this fever, which is like a plague, from the numbers which it carries of. Dr. Duncau, of Edinburgh, takes notice that a correspondent in Jamaica had report d an instance where, within the space of a few days, the patient had taken 270 grains of the submuriate of mercury (calomel), and had rubbed in twenty drachms of the strongest mercurial ointment, from which the *happiest effects* were *at last* produced.

On such authority, and from the well-known efficacy of mercury in inflammations of the liver, it may, probably, be a proper and valuable remedy in *typhus icterodes*. To ensure its success, it should, however, be employed at the very commencement of the disease, and be so conducted as to affect the mouth before the dangerous symptoms of the second stage of the fever make their appearance.

If the stomach be irritable, we cannot have recourse to the internal use of mercury; but it may be employed externally at any period of the disease, so long as the extremities continue warm, and the absorbents preserve their power. In having recourse to mercury, we may direct half a drachm, or even a drachm of the strongest ointment to be rubbed into the thighs, hams, legs, and arms, every four hours, and we may give hydrargyri submurias internally, either by itself, or combined with opium *, according to the state of the bowels. When a gentle ptyalism takes place, its use ought immediately to be omitted, and only nourishment and wine be given.

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* R. Hydrargyri Submuriat. gr. ij.—iv.
Opii gr. ss.
Confect Rosæ q. s. M.
Ft. Pilula pro dos. 4ta hora repetenda.

ST. ANTHONY's FIRE.

ERYSIPELAS.

PHLEGMON DESCRIBED.

A *Phlegmon,* or boil, is an inflammatory affection of the skin, with a swelling rising generally to a more considerable eminence in the middle of it; of a bright red colour; both the swelling and colour being pretty exactly circumscribed; the whole being attended with a pain of distension, often of a stounding or throbbing kind, and frequently ending in suppuration.*

ERYTHEMA DESCRIBED.

An *Erythema, Rose,* or *St. Anthony's Fire,* is an inflammatory affection of the skin, with hardly any evident swelling; of a mixed and not very bright red colour, readily disappearing upon pressure, but quickly returning again; the redness of no regular circumscription, but spreading unequally, and continuing almost constantly to spread upon the neighbouring part; with a pain like to that from burning; producing *blisters,* sometimes of a small, sometimes of a larger size; and always ending in a desquamation of the scarff-skin, but sometimes in gangrene.

* This falls more properly under the province of the surgeon.

THIS DISEASE IS LIABLE TO RETURN.

Persons who have once laboured under this disease are liable to returns of it.

TREATMENT OF ERYSIPELAS ATTACKING THE FACE.

The *Erysipelas of the face* is to be cured very much in the same manner as *phlegmonic inflammations*, by *blood-letting*, *cooling purgatives*, and by employing every part of the *antiphlogistic regimen*;* and our experience has confirmed the fitness of this method of cure.

EVACUATION, HOW AND WHEN TO BE EMPLOYED.

The *evacuations* of *blood-letting* and *purging*, are to be employed more or less according to the urgency of symptoms, particularly those of the pyrexia, and of those which mark an affection of the brain. As the pyrexia continues, and often increases with the inflammation of the face; so the evacuations mentioned may be employed at *any time* in the course of the disease.

THE HEAD OF THE PATIENT TO BE RAISED.

In this, as in other diseases of the head, it is proper to put the patient, as often as he can easily bear it, into somewhat of an erect posture.

OF OUTWARD APPLICATION.

As in this disease there is always an *external affection*, and

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* The antiphlogistic regimen has been described fully when treating of Continued Fevers.

as in many instances *there is no other*; so *various external applications* to the part affected have been proposed; but almost all of them are of *doubtful effect*. The narcotic, refrigerant, and astringent applications, are suspected of disposing to *gangrene*; spirituous applications seem to increase the *inflammation*; and all oily or watery applications seem to occasion its *spreading*.* The application that seems most safe, and which is now most commonly employed, is that of a *dry mealy powder* frequently sprinkled upon the inflamed parts.†

HOW TO BE TREATED WHEN THE HEAD IS NOT AFFECTED.

An *Erysipelas Phlegmonodes* frequently appears *on other parts of the body*, beside the face; and such other erysipelatous inflammations frequently end in *suppuration*. These cases are seldom *dangerous*. At coming on, they are sometimes attended with *drowsiness*, and even with some *delirium*;

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* Many practitioners recommend the application of *cabbage leaves* to *erysipelatous swellings*, and their efficacy has been *frequently approved*. They ought to be removed as soon as they grow warm or uneasy, and fresh cold ones applied. Washes of Goulard's Extract have been frequently used: but not with advantage. The application of gruel is certainly the safest and best.

† *Wheat-flour* is apt to run into hard lumps by the thin acrimonious liquor which always exudes from parts affected with erysipelas. *Oat-meal* not being so liable to this inconvenience is therefore preferable: it ought to be wiped off, and a fresh quantity applied twice or thrice a day. I have been in the habit, with Dr. Willan of ordering simple *gruel* cold, so as to make a paste over the face and parts affected, frequently applied.

but this rarely happens; and these symptoms do not continue after the inflammation is formed. *I have never seen an instance of the translation of this inflammation from the limbs to an internal part*; and though these inflammations of the limbs be attended with *pyrexia*, they seldom require the *same evacuations* as the erysipelas of the face. At first they are to be treated by *dry mealy applications only*; and all humid applications, as fomentations, or poultices, are not to be applied, till, by the continuance of the disease, by the increase of swelling, or by a throbbing felt in the part, it appears that the disease is *proceeding to suppuration.*

WHEN BARK SHOULD BE GIVEN.

We have hitherto considered *erysipelas* as in a great measure of a *phlegmonic nature*; and, agreeably to that opinion, we have proposed *our method of cure.* But it is probable, that an *erysipelas* is sometimes attended with, or is a symptom of, *a putrid fever*, and, in such cases, the *evacuations* proposed above may be improper, and the use of the *Peruvian bark* may be necessary; but I cannot be explicit upon this subject, *as such putrid cases have not come under my observation.**

DOCTOR THORNTON'S PRACTICE.

Cases requiring bark, I have most frequently met with in London and the environs, or what I would term mild cases of erysipelas,

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* Such cases, however, are mentioned by practitioners.

although I have seen also the worst. In all cases I *fear the lancet*, as disposing to *gangrene*, and prefer a *middle course*. As the stomach is always affected, I begin with neutral salts, to which I usually add *magnesia*.

R. Magnes. Vitriolat. scr. 2.
Magnes. ust. scr. 1.
Infus. rosæ unc. 1.
Aq. Cinnam.
Aq. rosæ aa dr. 2.
ft. Haust quartâ quâque horâ sumendus.

When the *bowels* are evacuated, *saline draughts*, in a state of effervescence, every three hours, are found very refreshing.

After a *few days*, I do not hesitate to give two grains of *Dover's Powder* (pulv. ipecac. comp.) every *four hours* in two ounces of camphorated mixture, until perspiration be induced.

The *food* all the while to be gruel, sago, and panada, often given, and no wine or beer. *Fruits* may be eaten, especially fresh or Lisbon grapes.

After some few days longer, I do not fear to give a purge of three grains of calomel, worked off with a rhubarb draught of fifteen grains, and a scruple of vitriolated kali, when I give the bark, an ounce of the decoction, with half an ounce of cinnamon-water every six hours.

In this way I have conducted most of my cures.

THE SMALL-POX.

VARIOLA.

DESCRIPTION.

THE *small-pox* is a disease arising from a contagion of a specific nature, which first produces a fever, and, on the third or fourth day thereof, produces an eruption of small red pimples. These are afterwards formed into pustules, containing a matter, which, in the course of eight days from the time of the eruption, is changed into pus. After this, the matter dries, and falls off in crusts.

TWO VARIETIES.

This is a general idea of the disease; but there are two particular forms or varieties of it, well known under the appellations of the *Distinct* (discreta) and *Confluent*, (confluens), implying that in the former, the pustules are separate from each other, in the other that they run together.

HOW TO BE TREATED BEFORE THE ERUPTION APPEARS.

When, from the prevailing of small-pox as an epidemic, and more especially when it is known that a person not formerly affected with the disease has been exposed to the infection, if such person should be seized with the symptoms of fever, there can be little doubt of its being an attack of the small-pox; and therefore he is to be treated in every respect as if the disease had been received by innoculation. He is

to be freely exposed to a *cool air*, to be purged, and to have *cooling acids* given liberally.*

ON LETTING OF BLOOD.

If these measures moderate the fever, nothing more is necessary: but if the nature of the fever attacking a person be uncertain; or if, with suspicions of the small-pox, the symptoms of the fever be violent; or even if, knowing the disease to be small-pox, the measures mentioned shall not moderate the fever sufficiently; it will be proper to let some *blood*: and this will be more especially proper, if the person be an adult, of a plethoric habit, and accustomed to full living.†

VOMITING.

In the same circumstances, we judge it will be always proper to give *a vomit*, as useful in the commencement of all fevers, and more especially in this, where a determination to the stomach appears from pain and spontaneous vomiting.‡

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* The cooling acids have been described in former notes on General Fevers. Whey made *with cream of tartar* is very useful in the small-pox, as it is a cooling drink, and at the same time laxative. It is made by throwing into a quart of *boiling milk* half an ounce or six drachms of powdered *cream of tartar*.

† This practice is most judicious, and ought to be strictly followed. It is generally, however, neglected for fear of impeding the eruption.

‡ Cullen has omitted to say any thing of *purging*, which is found to be very useful at the onset of this disease. All purgatives are extremely nauseous to children; and as it is of little consequence

OF CONVULSIONS.

It frequently happens, especially in *infants*, that, during the eruptive fever of the small-pox, *convulsions* occur. Of these, if only one or two fits appear *in the evening preceding the eruption*, they give a favourable prognostic of a mild disease, and require no remedy; but if they occur *more early*, and be violent and frequently repeated, they are very dangerous, and require a speedy remedy. For this purpose, *bleeding* is hardly ever of service; *blistering* always comes too late; and the only remedy I have found effectual, is an *opiate* given in a *large dose*.*

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what purgative we use, if we only avoid the hot drastic stimulants, we ought to pay attention to the agreeableness of the form. Children may in general be deceived by the following device: Put half an ounce of senna leaves (after the stalks are all picked out) into a tea-pot, with a quarter of an ounce of black or green tea; pour on it a quart of boiling water. Let the child see it poured out into a tea-cup, sweetened with plenty of moist tugar, and cream put to it. The child will drink it with avidity. A tea-cupful may be given every hour till it begin to operate.

If this device should fail a second time, another may be used in its stead. Two drachms of senna leaves, powdered, may be added to half a pound of gingerbread paste; the mass may be divided into fifteen small cakes to be baked; give the child one of these cakes every half-hour till it begins to operate, or till he has taken a sufficient dose for his age.

Children will sometimes eat as many tamarinds as will sufficienly answer all the intentions of a formal purge. A little cassia-pulp, added to the tamarinds, will increase their activity, and will not be easily perceived by the child.

* The doses for children in these cases are as follow: A child of

WHEN MEDICINES WOULD BE INJURIOUS.

These are the remedies necessary during *the eruptive fever*; and if, *upon the eruption*, the pimples of the face be *very few* and *distinct*, the disease is *no further* of *any danger*, requires *no remedies*, and *purgatives*, prove *often hurtful*.

SYMPTOMS DENOTING DANGER.

But when, upon the eruption, the pimples on the face are very numerous; when they are *not distinct*; and especially when, upon the *fifth day*, the *fever does not suffer a considerable remission*;* the disease will still require a *great deal of attention*.

WHEN AFTER THE ERUPTION, BLEEDING AND PURGING ARE REQUIRED. CAUTION.

If, *after the eruption*, the *fever shall continue*; the avoiding *heat*, and the continuing to expose the body to *a cool air*, will still be proper. If the fever be considerable, with a full and hard pulse, in an adult person, *a bleeding* will be *necessary*; and, more certainly, *a cooling purgative*. It is, however, *seldom* that *a repetition of the bleeding* will be proper, as a loss

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half a year, 5 drops of laudanum: From half a year to a year, 6 drops: From one to two years, 7 or 8; From two to thee, 9 or 10: Five years, 12, or at most 15. These are large doses, and are such as are only to be given to robust children; and must be lessened if the children are weakly, or remarkably irritable.

* The practitioner ought to be particularly attentive to the symptoms which appear on the *fifth day*.

of strength does usually come on very soon; but the *repetition of a purgative*, or the *frequent use* of *laxative glysters*, *is commonly useful.**

WHEN BARK, ACIDS, AND WINE, SHOULD BE GIVEN.

When a loss of strength, with other marks of a putrescent tendency of the fluids appears, it will be necessary to exhibit the *Peruvian bark* in *substance*, and in *large quantity*.† In the same case, the free use of *acids*, and of *nitre*,‡ is useful; and it is commonly proper also to give *wine very freely*.§

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* *Laxative glysters* are preferable to *repeated purgatives*, on account of their not debilitating the patient so much as purgatives. The following form has been found very effectual;

R. Fol. Sennæ, dr. 1.
Magnes. vitriolat. dr. 2.
Aq. bullient. lb. i.
Colaturæ frigidæ adde.
Syr. e Spin. Cervin. dr. ss.
Ol. Olivar. unc. ss.
M.

Or even a simple solution of magnes. vitriolat. in warm water.

† The method of giving the bark in the small-pox, is the same with that mentioned in fevers in general. For children, the glyster there mentioned, is extremely convenient, and proves wonderfully efficacious.

‡ This must be given in a powder, with sugar added to it, 10 grains each.

§ The wine best suited to these cases is Port wine: but as children sometimes loath it, good claret may be substituted in its place, or Lisbon, or Sherry, sweetened.

WHEN OPIATES ARE TO BE GIVEN.

From the *fifth day* of the disease, onward *through the whole course of it*, it is proper to give *an opiate once* or *twice a-day*; taking care, at the same time, to obviate *costiveness*, by *purgatives*, or *laxative glysters*.

WHEN BLISTERS ARE TO BE EMPLOYED.

In a *violent disease*, from the *eighth* to the *eleventh day*, it is proper to lay on *blisters successively* on *different parts of the body*, and *that without regard to the parts being covered with pustules*.*

ON THE USE OF GARGLES.

If, in this disease, the tumour of the fauces be considerable; the deglutition difficult; the saliva and mucus viscid, and with difficulty thrown out; it will be proper to apply *blisters* to the external *fauces*, and to employ diligently *detergent gargles*.†

ANTIMONIALS RECOMMENDED.

During the whole course of the disease, when any considerable fever is present, the frequent exhibition of *antimo-*

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*I have never seen blisters applied, but I should apprehend certain mortification.

† The best detergent gargles in this case are the tincture of roses with honey; or the gargle of sage and rose-tea, with vinegar and honey; or two drachms of tincture of myrrh, to six ounces of infusion of roses.

nial medicines, in *nauseating doses*, has been found *useful*;* and these, for the most part, sufficiently answer the purpose of *purgatives*.

OF THE SECONDARY FEVER.

The remedies before mentioned are those frequently necessary, from *the fifth day*, till *the suppuration is finished*. But as, after that period, the fever is sometimes continued and increased; or, as sometimes, when after there has been little or no fever before, a fever now arises, and continues with considerable danger; this is what is called the *Secondary Fever*, and requires *particular treatment*.

WHEN BLEEDING AND PURGING SHOULD BE USED.

When the *secondary fever* follows the *distinct small-pox*, and the pulse is *full* and *hard*, the case is to be treated as *an inflammatory affection* by *bleeding* and *purging*.

WHEN THE BARK AND WINE SHOULD BE USED.

But, if the *secondary fever* follow the *confluent small-pox*, and be a continuance or exacerbation of the fever which had

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* A solution of two grains of *emetic tartar* (antim. tart.) in eight ounces of water, answers this intention very effectually. The dose is to be determined by the nauseating effect produced: a table spoonful of the solution may be given occasionally every two or three hours. Care, however, must be taken, that vomiting is not produced: and, at the same time, a sufficient quantity must be given to produce a nausea. Both these circumstances depend on the age, strength, and constitution of the patient, and on the violence of the disease.

subsisted before, it is to be considered as of the *putrid kind*; and in that case, *bleeding is improper.* Some *purging* may be necessary; but the remedies to be chiefly depended on, are the *Peruvian bark* and *acids.**

AN ANTIMONIAL EMETIC RECOMMENDED.

When the *secondary fever first appears*, whether it is after a *distinct* or a *confluent* small-pox, it will be useful to exhibit an *antimonial emetic* in *nauseating doses*, but in such a manner as to produce *some vomiting.*†

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* The secondary fever is always the worst, and most dangerous stage of the disease. In the distinct small-pox, it seldom occurs; but it is a constant attendant on the confluent kind. It seems to be owing to the absorption of the matter; for it never appears, evidently at least, till after the suppuration: and, *cæteris paribus*, it is always more violent in proportion to the quantity of pustules. Some authors recommend opening the pustules, in order to evacuate the matter, as a preventive against the secondary fever; and when the eruption is large, this practice is advisable.

The *Peruvian bark* must be given in these cases in the largest quantities that the stomach can bear, and also in glysters as formerly mentioned. Some practitioners, beside *the internal use of bark*, and giving *it in glysters*, have advised it *to be applied externally by throwing the dry powder on those parts of the body that are the most ulcerated.*

† The mode of treating the small-pox being the same, whether it arises naturally, or from inoculation, a reference must be had to the plan which is laid down in the preceding pages; and as purging is not less necessary after the small-pox by inoculation than by the natural way, it ought by no means to be neglected.

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN.

USE OF COLD WATER.

In the early stage of small-pox, and during the eruptive fever, when the symptoms run high, we may, in addition to exposing the patient freely to cool air, recommend washing the body partially or generally with cold water. As the quantity, as well, perhaps, as the quality of the pustules depends greatly on the violence and duration of the eruptive fever, and as by mitigating the one we render the other more favourable, it would seem really advisable, as soon as a person is seized with variolous fever, wherein the febrile symptoms are any way high, to have cold water thrown over the body every four or six hours, which plan may be continued until the eruption is completed. The safety and utility of the remedy are recorded in the thirteenth number of the Edinburgh Medical Journal, and are confirmed by my own experience. When had recourse to on the attack of variolous fever it usually mitigates the head-ache, pain in the back, and other febrile symptoms; a slow and gentle perspiration succeeds, and a mild eruption takes place. Where it is resorted to after the small-pox have made their appearance, and by their quantity and the duration of the fever, a confluent pock is expected, the cold bath seems not only to moderate the febrile symptoms, but likewise to diminish the number of the pustules, and in doing so, greatly to lessen the danger of the disease.

USE OF MERCURY.

Mons. Dessarts, in the sitting of the French National Institute, is said, however, to have adduced a number of facts to prove that the natural small-pox is rendered much milder by the use of mercurial remedies, and probably the inoculated disease may likewise be influenced by them. Indeed it appears from the experiments of Van Woensel, that the submuriate of mercury, given as an alterative for some days before inoculation, and till the eruptive fever commences, does with certainty render the disease mild. A singular circumstance mentioned by the same author is, that this preparation of mercury, triturated with variolous matter, incapacitates it from conveying the disease by inoculation.*

BEST MEANS OF PREVENTION.

Various plans have been proposed, with a view wholly to banish the casual small-pox. Dr. Haygarth has bestowed much attention on this subject; and were the regulations pointed out by him to be rigidly enforced, there is reason to believe they would be found sufficient for the purpose. A surer and more effectual way, however, to eradicate the disease, is by inoculating with the small-pox, or *vaccine matter* every adult who never has had the small-pox; as likewise every child soon after its birth.

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* Vide Doctor Thomas's Practice of Physic, a work which merits every praise, and must be added to the shelf of every Medical library. The author is a gentleman of the soundest judgment, and greatest penetration, and deepest learning, and has made many discoveries himself, and his work is a rich mine of medical treasure.

INOCULATION OF THE SMALL-POX.

On the coming on of the febrile symptoms, which is generally on the *seventh day* in the *inoculated small-pox*, the patient is by no means to be suffered to take to his bed: but, on the contrary, must be constrained to keep up, and to be as much *in the cool air as possible:* and if thirsty, he may partake freely of some cooling acid drink. As the number of pustules would be much increased by lying with another person, the patient should always have a bed to himself.

SUTTON'S PRACTICE.

From the time that the matter is introduced into the system to the appearance of the eruptions, it will be necessary to observe a *total abstinence* from *all animal food,** and to give some gentle purgative every second day; the best kind is the following powder:—Mix a drachm of prepared chalk with twelve grains of calomel, and one grain of tartarised antimony, which for an adult may be divided into three doses, and for a child of a year old, into twelve.

We are short on this subject, as vaccination has we hope wholly superseded the small-pox inoculation.

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* A lady complained once to Sutton, a celebrated inoculator, that she was not satisfied her child had so few pustules; give her, said he, a mouthful of that hare on table, which was done, and she soon became alarmed from the number of pustules which then appeared upon her.

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN

NEW MODE OF INOCULATION OF THE SMALL-POX.

Letter from Dr. Thornton to Dr. Beddoes.

Sept. 1, 1795.

DEAR SIR,

THERE is no plausible reason against *general inoculation*, but the danger which pregnant women must incur.—From your explanation of the change wrought on the constitution by child-bearing, I conceived an hope, that this great improvement in medicine admitted even still of further perfection. I fixed upon the month of May, 1794, to ascertain this point, and as the small-pox is evidently inflammatory, I chose this month in preference to March or April, when the fibre, rendered more irritable by the preceding winter, is strongly affected by every stimulus; as also for another reason, in order that my patients might live upon gooseberry food, which is not only pleasant and nutritious, but affords to the system *oxygene* uncombined with *caloric*, and acts also as a mild aperient. Having first well cleansed the intestinal canal, with rhubarb and vitriolated kali, I followed your idea of greatly diluting the variolous matter,* and in order that as little as possible might be

* See the observations subjoined to the translation of Mr. Gimbernat on Hernia.

carried by the absorbents into the system, I gently raised with a lancet the skin on the deltoid muscle of the left arm, and when all inflammation was subsided, I inserted under the small scratch the diluted viriolous matter with the point of a needle.

In the first trial a circle of inflammation, resembling the bur of the moon in a misty night, was observed around the place where the variolous matter was inserted, and the arm rose a little, but no eruption whatever appeared. Mr. Sadler, who lives at No. 86, Tottenham-court Road, seeing the young lady have the disorder so remarkably kind, wished me to inoculate his only child, and I pursued exactly the same plan.---A slight rising of the arm, but no eruption appeared; one day only the little girl complained of head-ache. I have also had a third example, and no eruption whatever has appeared, or any after-evil, and the little patients have enjoyed uninterrupted health, and they have been exposed frequently to the infection, without having taken it, which leads me to the persuasion that they are perfectly secure, and to hope that *the only objection* against *general inoculation* may, by an attention to the suggestions you have given, be at last obviated, and the disease rendered universally mild: but this I mention only as a supposition, to be refuted or confirmed by future experience.

I remain,

Dear Doctor,

Your faithful Friend,

R. J. THORNTON.

P. S. Mr. C. Gimbernat informs me that the practitioners in Andalusia give *vinegar* to drink to their small-pox patients with the greatest success.

DOCTOR JENNER,

THE DISCOVERER OF

VACCINE INOCULATION.

Vaccination is the discovery of Dr. Jenner, for he found that the virus taken from the teat of a cow, labouring under the cow-pock, would produce a very mild disease, without irruption, similar to what has been just before described, by greatly diluting the small-pox virus. A single pustule * rises in the arm, similar in appearance to a small-pox vesicle, and in duration. There is also a fever induced on the seventh day, but seldom very violent, and the patient from this mild disease is secured ever after from the small-pox, excepting he has tinea (or ring-worm) which appears to prevent, until cured, the constitutional security from vaccine inoculation.

The introduction of this species of inoculation throughout both the army and navy, and its extension to France, Spain, Germany, and every part of the continent, as well as to both the Indies, fully stamps its value and efficacy, and gives us reason to hope that it will shortly be adopted by every nation of the earth with whom we have the least communication, and that the small-pox will be thereby banished the earth. Vaccination has indeed penetrated to the remotest corners of the globe, and wherever it has been introduced, the increasing experience of every year has only served to

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* There is no eruption, hence it is called the cow-pock.

confirm pretty generally a confidence in its efficacy. It has been recommended and adopted by far the greatest and most respectable part of the profession, because it equally secures with the inoculated small-pox, it never disfigures, is attended with no risk or danger, does not leave behind any humours, and is not infectious; whereas the inoculated small-pox, by spreading infection in London, has produced a greater mortality since it has been introduced than before that period.*

In inoculating for the vaccine disease, we should carefully attend to the following circumstances:

1st, That the fluid matter should not be taken any time before, but not after the ninth day of the disease.

2ndly, That the fluid should be perfectly transparent, as it is not to be depended upon, if it has become in any degree opaque.

3dly, That the matter, if not used immediately, should be allowed to dry gradually and thoroughly before it is laid by for future use.

4thly, That the punctures can scarcely be made too superficial, and on no account should more than one be made in the arm or leg.

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* The numbers who died of the small-pox in England before inoculation of the small-pox was introduced, amounted to about 15,000 annually. Since the introduction of inoculation, the numbers have swelled to 20,000; in London alone 2,000 die annually. Since vaccination has been introduced, the numbers who die of the small-pox, amount only to a few hundreds. In France, and other foreign countries, the small-pox has nearly disappeared.

DISCOVERIES SINCE DR. JENNER.

From the report of the physicians of the Vaccine Pock Institution, it appears "that the matter of a single pustule, being mixed with one quarter of an ounce measure of warm water, such diluted matter excited as distinct a vaccine pock by inoculation, as an equal quantity of undiluted matter." A pock so excited, was not attended, apparently, say they with less inflammation, or constitutional affection, than that excited by a larger quantity of undiluted matter; which points out an easy method of inoculating several persons from a single vaccine pock—a great conveniency indeed, when the poor to be inoculated at one time, are very numerous. The fluid is retained best on lancets made with zinc.

Seeing that the only inconvenience arising from vaccination was frequently a sore arm, and high active inflammation on that part, inducing sometimes a very strong fever on the seventh day, I have vaccinated in the leg on the outside of the calf, and from being more remote from the heart, the fever has been less violent and inflammatory, and the part has been better defended from injuries, and is not so liable to come into a sore. I glory in having been the first who in a large public institution introduced vaccination, and from personal labours and writings, have been very instrumental in promoting so happy an improvement, my work on that subject having been translated into French, and other modern languages, entitled, "Facts, decisive in favor of the cow-pock, which was published in 1800."

CHICKEN-POX.

VARICELLA.*

PECULIAR CHARACTER.

THIS disease seems to depend upon a specific contagion, and to affect persons but once in their lives. It is hardly ever attended with any danger; but as it seems frequently to have given occasion to the supposition of a person's hav-

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* As this disease is generally mild, and scarcely ever requires the assistance of art in the cure, the author very properly passes it over in a cursory manner. It deserves however, from its being supposed by persons not adepts in science to be *the small-pox*, and as such has furnished sometimes an handle against vaccination; hence it requires rather a clearer definition than Cullen has bestowed upon it. After slight symptoms of fever, as lassitude, loss of sleep, wandering pains, loss of appetite, &c. an eruption appears; first on the back, consisting of small reddish pimples, much resembling the first appearace of the small-pox. On the *second* day the red pimples have become small vesicles, containing a colourless fluid; and sometimes a yellowish transparent liquor. On the *third*, the pustules arrive at their full maturity, and, in some instances, very much resemble the genuine small-pox. Soon after, the fluid becomes extravasated by spontaneous, or accidental, rupture of the tender vesicle, and a thin scab is formed at the top of the pock; without pus ever being formed, as in the true variola. Generally before the *fifth* day the whole eruption disappears, and no cicatrix or mark is left behind. It may always be distinguished from the small-pox by the small degree of fever; by the pimples first appearing in the back; by no suppuration taking place; by the pustules falling off, in scales, about the fifth day; at which period the eruption in variola is only just completed.

ing the small-pox twice, it is proper to study this disease, and to distinguish it from the genuine small-pox.

HOW DISCRIMINATED FROM THE SMALL-POX.

This may be generally done by attending to the following circumstances. The eruption of the chicken-pox comes on with very little fever preceding it, or with fever of no determined duration. The pimples of the chicken-pox, more quickly than those of the small-pox, are formed into little vesicles or pustules. The matter in these pustules remains fluid, and never acquires the colour or consistence of the pus which appears in the pustules of the small-pox. The pustules of the chicken-pox are always, in three or four days from their first appearance, formed into crusts.

CURE.

The cure is speedily effected by 20 drops of antimonial wine three times a day, or a very mild purgative given once or twice in this disease.

THE MEASLES.

RUBEOLA.

PECULIAR CHARACTER OF THIS DISEASE.

This disease also depends upon a specific contagion, and affects persons but once in their lives. It occurs most frequently in children; but no age is exempted from it, if the persons have not been subjected to it before. It commonly appears as an epidemic, first in the month of *January*, and *ceases* soon after *the summer solstice*; but various accidents, introducing the contagion, *may* produce the disease at other times of the year.

FIRST SYMPTOMS DENOTING THE DISEASE.

The disease always begins with a *cold stage*, which is soon followed by a *hot*, with the ordinary symptoms of *thirst*, *heat*, *anxiety*, *sickness*, and *vomiting*; and these are more or less considerable in different cases. Sometimes from the beginning the fever is sharp and violent; often, for the first *two days* it is obscure and inconsiderable, but always becomes *violent before the eruption*, which usually happens *upon the fourth day*.

SYMPTOMS AT THE TIME OF THE ERUPTIVE FEVER.

This *eruptive fever*, from its commencement, is always attended with *hoarseness*, with a *frequent hoarse dry cough*, and frequently *with some difficulty of breathing*. At the same time, the *eye-lids* are somewhat *swelled*, the *eyes* are *a little inflamed*,

and *pour out tears*, and, together with these symptoms, there is a *coryza*, and frequent *sneezing*.* For the most part, a constant drowsiness attends the beginning of this disease.

NATURE OF THE ERUPTION.

The *eruption*, as we have said, commonly appears upon the *fourth day*, *first* on *the face*, and *successively* on the *lower parts* of *the body*. It discovers itself first in *small red points*; but, soon after, a number of them appear in *clusters*, which do not rise into *visible pimples*, but by the *touch* are found to be *a little prominent*. This is the case on the *face*;† but on other parts of the body, the prominence, or *roughness*, is hardly to be perceived. On the *face* the *eruption* retains *its redness*, or has that increased for *two days*: but, on the *third*, the *vivid redness* is changed to a *brownish red*: and, in *a day* or *two more*, the *eruption entirely disappears*, while a *meally desquamation* takes place. During the whole time of the eruption, the face is somewhat turgid, but seldom considerably swelled.

OF THE FEVER IN THE MEASLES.

Sometimes, after the eruption has appeared, the fever

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* These last symptoms are the peculiar diagnostics of this disease, water running from the eyes especially. The eruption is also in half moons. I know a lady, who keeps a ladies school, who at once discovers the measles from a common catarrh, by smelling under the arm-pit.

† This roughness should be examined, to distinguish this disease from scarlet fever.

ceases entirely: but this is seldom the case; and more commonly *the fever continues*, or is increased *after the eruption*, and does not cease *till after the desquamation*. Even *then* the fever does *not always cease*, but continues with various duration and effect.

OF THE COUGH.

Though *the fever* happen to cease, upon the eruption's taking place, it is common for *the cough* to continue *till after the desquamation*, and sometimes *much longer*. In all cases, *while the fever continues*, the *cough also continues*, generally with an increase *of the difficulty of breathing*; and both of these symptoms arise to a degree that denotes a *pneumonic* affection. This may arise at any period of the disease; but very often it does not come on *till after the desquamation of the eruption*.

DIARRHÆA.

After the same period, also, a *diarrhœa* frequently comes on, and continues for some time.*

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* Where the diarrhœa is excessive, astringents and opium are necessary.

R. Misturæ cretæ, unc. 8.
Syrupi papaveris, unc. 1.
Fiat mistura, cujus capiat æger cochlearia duo magna post singulas sedes liquidas.

R. Confectionis aromaticæ, scr. ss.
Misturæ cretæ, unc. 1 ss.
Pulveris ipecacuanhæ, gr. ss.
Fiat haustus quartis horis sumendus.

OF THE DISEASES WHICH FOLLOW THE MEASLES.

It is common for the measles, even when they have not been of a violent kind, to be *succeeded* by *inflammatory affections*, particularly *ophthalmia* and *phthisis*.

NATURE OF THE BLOOD.

If the blood be drawn from a vein during the *measles*, with the circumstances necessary to favour the separation of the gluten, this always appears *separated*, and *lying on the surface of the crassamentum, as in inflammatory diseases.**

R. Confectionis aromaticæ, scr. ss.
Extracti hæmatoxyli, gr. 15.
Misturæ cretæ, unc. 1 ss.
Fiat haustus quartis horis capiendus.

R. Extracti catechu contusi, dr. 2. ss.
Aquæ ferventis, lb. 1.
Macera, et liquorem frigefactum cola.

R. Hujus colaturæ, unc. 1 ss.
Pulveris tragacanthæ compositi, gr. 15.
Confectionis aromaticæ, scr. 1.
Syrupi papaveris, dr. 2.
Fiat haustus quartus horis sumendus.

To either of the above five drops of laudanum may be added.

Should the diarrhœa continue, and threaten great exhaustion, recourse must be had to the opiate confection, astringent clysters, and the more powerful astringent remedies recommended above against diarrhœa.—Vide Dr. Hooper's Physician's Vade Mecum.

* A buff-coat on the blood, as we commonly say.

SOMETIMES HAS A PUTRID TENDENCY.

For the most part the measles, even when violent, are without any *putrid tendency*; but in some cases such a tendency appears, both in the course of the disease, and especially after the ordinary course of it is finished.*

WHEREIN CONSISTS THE DANGER.

From what is delivered, it will appear, that the measles are distinguished by a *catarrhal affection*, and by *an inflammatory diathesis* to a considerable degree; and therefore the danger attending them arises chiefly from the coming on of a *pneumonic inflammation*.

OF BLEEDING, AND WHEN TO BE EMPLOYED.

From this consideration it will be obvious, that the *remedies* especially necessary, are those which may obviate and diminish the *inflammatory diathesis*; and therefore, in a particular manner, *blood-letting*. This remedy may be employed *at any time in the course of the disease*, or *after its ordinary course is finished*. It is to be employed more or less according to the urgency of the symptoms of fever, cough, and dyspnœa; and generally may be employed *very freely*.† But, as the symptoms of *pneumonic inflammation* seldom come on during

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* Vide the London Med. Observations, Vol. IV. Art. XI. Wine here is absolutely necessary.

† Bleeding ought to be used where it is absolutely necessary; but, *too free a use of it* has been attended with a long continued weakness, and a very slow recovery. Leeches have frequently been applied over the chest with children.

the *eruptive fever*; and, as this fever is sometimes violent immediately before the eruption, though a sufficiently mild disease be to follow; *so bleeding is seldom very necessary during the eruptive fever*, and may often be *reserved* for the periods of greater danger which are perhaps to ensue.

COOLING PURGATIVES AND BLISTERS.

In all cases of measles, where there are no marks of *putrescency*, and where there is no reason, from the known nature of the epidemic, to apprehend *putrescency*, *bleeding* is the remedy to be depended upon: but assistance may also be obtained from *cooling purgatives*;* and particularly from *blistering on the sides*, or *between the shoulders*.†

HOW TO TREAT THE DRY COUGH.

The *dry cough* may be alleviated by the large use of *demulcent pectorals, mucilaginous, oily or sweet*.‡ It may, however,

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* As in the inflammatory fever.

† With children it is better to rub the chest with the following ointment, three or four times a day.

R. Lin. sapon, unc. 1. ss.
Tinct. Cantharid. dr. 4.

‡ Two ounces of pearl-barley, and four ounces of dried figs cut to pieces, boiled in a gallon of water to three quarts, is a good drink in these cases. If the patient loaths this drink, linseed tea, with liquorice root with it, or a slight infusion of Orris root in boiling water, may be substituted in its place, or a solution of an ounce of gum arabic in a pint of water. Barley water sweetened with capillaire.

Oily emulsions, are also recommended; the most usual is the following:—

be observed, with respect to these *demulcents*, that they are not so powerful in involving and correcting the acrimony of the mass of blood as has been imagined; and that their chief operation is by besmearing the fauces, and thereby defending

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R. Ol. Amygdal. unc. 2.
Aq. Font. unc. 6.
Alkali caustic. q. s. ut. fiat emuls. cui adde
Syrup. althææ, unc. 2.

The following is also excellent:—

R. Ol. amygdal. dr. 1.
Sacch. purif. pulv. dr. 2.
Pulv. gum arab. dr. 1.
Confect. amygdal. scr. 2.
Aq. rosæ, unc. 7.
ft. Mist.

A dessert spoonful is to be taken every three hours.

The patient may take half a tea cup full of this emulsion occasionally, when the cough is most troublesome. The cough may also be relieved, by taking now and then a tea-spoonful of the following linctus:—

R. Ol. amygdal.
Syrup. althææ.
Conserv. cynosbat. āā. unc. 1.
Pulv. gum arab. dr. 1.
M. f. linct.

Or the following:

R. Mel. despumat.
Ol. amygdal. āā. unc. 1.
Succ. limon, unc. ss.
M. f. linct.

them from the irritation of acrids, either arising from the lungs, or distilling from the head.

WHEN OPIATES SHOULD BE EMPLOYED.—CAUTION.

For moderating and quieting the cough in this disease, *opiates* certainly prove the most effectual means, whenever they can be safely employed. In the measles, in which an inflammatory state prevails in a considerable degree, *opiates* may be supposed to be *inadmissible ;* and, in those cases in which a high degree of pyrexia and dyspnœa show either the presence or at least the danger, of *pneumonic inflammation*, I think that opiates might be very hurtful. In cases, however, in which the dyspnœa is not considerable, and where *bleeding*, to obviate or abate the inflammatory state, has been duly employed, and where the cough and watchfulness are the urgent symptoms, I think that *opiates* may be safely exhibited, and with great advantage.* I think, further, that, in all the *exanthemata*, there is *an acrimony* diffused over the system, which gives a considerable *irritation*,

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* *Opiates*, in all inflammatory cases, ought to be cautiously used, The danger arising from them is *considerably* obviated, by using only the gummy part of the opium, and therefore the watery solution of opium is in these cases preferable to any other form.

The syrupus papaveris albi, is an opiate peculiarly adapted to this disease for children; the dose of it is immaterial, provided, we do not exceed an ounce in the four-and-twenty hours; a teaspoonful may be taken when the cough is troublesome, and may be repeated every two or three hours according to the urgency of the symptoms.

and, for obviating the effects of this, *opiates* are useful, and always proper, when *no particular contra-indication* prevails.

OF PURGING AND BLEEDING AFTER THE MEASLES.

When the *desquamation* of the measles is finished, though there should then be no disorder remaining, physicians have thought it necessary to *purge* the patient several times *with a view to draw off the dregs of this disease*, that is, a portion of the morbific matter which is supposed to remain long in the body. I *cannot reject this supposition;* but, at the same time, cannot believe, that the remains of the morbific matter, diffused over the whole mass of blood, can be *entirely* drawn off by purging; and it appears to me, that, to avoid *the consequences of the measles*, it is not the drawing off the morbific matter which we need to study, so much as the *obviating* and *removing* the *inflammatory state of the system* which had been *induced* by *the disease.* With this last view, indeed, *purging* may still be a proper remedy; but *bleeding*, in proportion to the symptoms of *inflammatory disposition*, is yet more so.*

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* The complaints which the measles often leave behind it are chiefly pneumonic. The *cough* is the most troublesome symptom, and to relieve the patient from it, not only bleeding and purging must be used, but expectorants ought also to be administered. The lac ammoniacum, and tinctura scillæ have often proved beneficial.

On the supposition, that the cough and pneumonic affection remaining after the measles are owing to a peculiar acrimony, some practitioners have recommended alteratives and demulcents: experience, however, has found little advantage from their use.

REASONS AGAINST EMPLOYING COLD AIR.

From our late experience of the benefit of *cold air* in the *eruptive fever* of the *small-pox*, some physicians have been of opinion, that the practice might be transferred to the *measles;* but we have not yet had *trials sufficient* to *ascertain this.* There is no doubt that *external heat* may be *very hurtful* in the *measles*, as in most other *inflammatory diseases;* and therefore the body ought to be kept in *a moderate temperature* during the whole course of the *measles;* but how far, at any period of the disease, *cold air* may be applied with safety we are yet *uncertain. Analogy*, though so often the resource of physicians, is in general *fallacious;* and further, though the analogy with the small-pox might lead to the application of cold air during the eruptive fever of the *measles*, the analogy with catarrh seems to be against the practice. After the eruption had appeared upon the skin, we have had many instances of *cold air* making it *disappear*, and thereby producing much disorder in the system; and have also had frequent ex-

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The best method of avoiding the ill consequences that follow the disease, is a free use of *demulcent drinks* during the eruption, and of *expectorants* immediately after it. The *decoction hordei compositum* of the London Pharmacopœia is peculiarly adapted to these cases, but it is much improved by adding half an ounce of *Orris root*, when it is nearly boiled enough: if the orris be added too soon, the efficacious part of it evaporates.

amples of such disorder being removed by restoring *the heat of the body*, and thereby again *bringing forth the eruption.**

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* Though the application of cold air be dangerous, yet ventilation is of considerable use in the measles; as is also a frequent change of linen, and cleanliness. Wine, and every thing heating must be avoided.

DISCOVERIES

SINCE THE

TIME OF DR. CULLEN.

INOCULATION OF THE MEASLES.

This disease may be propagated by *inoculation*, as well as the small-pox. Dr. Home, of Edinburgh, appears to have been the first who actually made the experiment, and from not being able to collect either matter or a sufficient quantity of broken cuticle at the time of desquamation to produce the disease, he drew blood from the most superficial cutaneous vein, where the eruption was thickest. This received on cotton, he applied to a scratch made on each arm of the persons to be inoculated.

We are informed by him, that he inoculated twelve persons in this way, in all of whom the operation succeeded equal to his hopes. The eruptive fever generally commenced six days after inoculation, and the symptoms of the complaint were milder than they generally are in the casual measles. The fever was less severe, the cough either milder or wholly absent; the inflammation of the eyes was trifling; they watered however as much, and the sneezing was as frequent, as in the casual measles; nor did bad consequences follow any case of inoculated measles. No affection of the breast remained after it.

The chief difference between the casual and inoculated measles seem to be the absence of any *pulmonic affection* at all periods of the latter.

Notwithstanding Dr. Home's success, still inoculation for the measles is seldom or never practised.

DR. THORNTON'S PRACTICE.

ANTIMONIAL WINE.

Having had the advantage of attending, for four years, the Mary-le-bone Dispensary, a vast number of children constantly applied for advice and medicine during that period for the measles. It was my practice to order them to be retained in bed, which is no difficult matter in this disease, to keep up an equable perspiration. After an emetic given of antimonial wine, I then ordered twenty drops of antimonial wine to be given every three hours, and if it vomited or purged to be reduced, and drinking plentifully of barley-water and gruel (no wine), the disease was speedily removed, and there was no instance of any patient dying of that disease. The consequences attendant upon this disease were afterwards not to be dreaded, and two purges, of rhubarb and vitriolated kali after the third day were given, for by this treatment it was most commonly a disease only of three days.

PUTRID SORE THROAT.

(CYNANCHE MALIGNA).

A CONTAGIOUS DISEASE.

This is a *contagious disease*, seldom sporadic, and commonly epidemic.* It attacks persons of all ages, but more commonly those in a young and infant state. It attacks persons of every constitution when exposed to the contagion, but most readily the weak and infirm.

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* It appears always in the autumn, or winter months, and rarely or never in the spring. Bad *quinsies* are often mistaken for this disorder. But, in this disease, the patient *can swallow* without great pain, for the disease here treated of is, strictly, "a sore throat;" and by soreness, we aptly express the uneasy sensation accompanying *an ulcer*, and not that which attends an *inflammation*, which is, indeed, *pain*, but not properly *soreness*.

The *redness* of the skin in the face, neck, breast, and hands, is another obvious and distinguishing characteristic, which, in children, and young people especially, seldom fails to accompany this disorder.

In the common sore throat, a local inflammation is the disease; all the symptoms are derived from this source; and an acute throbbing *pain*, greatly increased upon swallowing even liquids, is the principal grievance. In the other, the whole habit suffers, as if by a stimulus of a peculiar nature; and although the throat is always more or less affected, yet it is sometimes the least part of the patient's complaint; and instances have occurred to me of considerable sloughs being formed, before any soreness or pain in the fauces has been mentioned.

Again, this disease is accompanied with a *sudden* prostration of strength, and a great tendency to *delirium*, than either a common

SYMPTOMS OF THIS DISEASE IN ITS WORST FORM.

This disease is usually attended with a considerable pyrexia; and the symptoms of the accession of this, such as frequent cold shiverings, sickness, anxiety, and vomiting, are often the first appearances of the disease. About the same time, a stiffness is felt in the neck, with some uneasiness in the internal fauces, and some hoarseness of the voice. The *internal fauces*, when viewed, appear of a *deep red colour*, with some tumour; but *this last is seldom considerable*, and *deglutition* is seldom *difficult* or *painful*.* Very soon a number of *white* or *ash-coloured spots* appear upon the *inflamed parts*. These *spots* spread and unite, covering almost the whole fauces with *thick sloughs;* which, falling off, discover *ulcerations*. While these symptoms proceed in the fauces, they are generally attended with a *coryza*, which pours out a thin acrid and fetid matter, excoriating the nostrils and

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angina, or almost any other distemper we are acquainted with. To have this symptom appear, in the disease we are treating of, on the first night, is not uncommon; and on the second, frequent. A girl about eight years of age, whom I attended, was scarce known to be indisposed, till she alarmed the family by appearing to be light-headed. She had made no complaint of her throat, nor was this part thought to be affected, till, upon examination, I found it so; being led to suspect it by the colour of her hands, and the *delirium*.

* This symptom should be particularly attended to: for an error in the practice here would be fatal. As with poetry, so with medicine:

> "A little knowledge is a dangerous thing;
> Drink deep, or taste not the Pierian spring."
>
> POPE.

lips. There is often also, especially in infants, *a frequent purging;* and a thin acrid matter flows from the anus, excoriating this, and the neighbouring parts.

STATE OF THE PULSE, AND DELIRIUM.

With these symptoms, the pyrexia proceeds with a *small, frequent,* and *irregular pulse;* and there occurs a manifest exacerbation every evening, and some remission in the mornings. A *great debility* appears in the animal functions; and the *sensorium* is affected with *delirium,* frequently with *coma.*

THE SCARLET EFFLORESCENCE.

On the *second day,* or *sometimes later, efflorescences* appear upon *the skin,* which are sometimes in *small points* hardly *eminent;* but, for the most part, *in patches of a red colour,* spreading and uniting so as to cover the whole skin. They appear *first* about the face and neck, and, *in the course of some days,* spread, by degrees, to the lower extremities. The *scarlet redness* is often *considerable* on the *hands* and *extremities* of the *fingers,* which feel *stiff,* and *swelled.* This eruption is often irregular, as to the time of its appearance, as to its steadiness, and as to the time of its duration. It usually continues *four days,* and *goes off by some desquamation of the cuticle:* but, neither on its first appearance, nor on its desquamation, does it always produce a remission of the pyrexia, or of the other symptoms.

ATTENDANT FEVER.

The progress of the disease depends on *the state of the fauces* and of the *pyrexia.* When the *ulcers* on the fauces,

by their *livid* and *black colour*, by the fetor of the breath, and by many marks of acrimony in the fluids, shew a tendency to *gangrene*, this takes place to a considerable degree; and, the symptoms of a *putrid fever* constantly increasing, the patient dies, often on the *third day*, sometimes *later*, but, *for the most part, before the seventh.* The acrimony poured out from the diseased fauces must necessarily, in part, *pass into the pharynx*, and there spread the infection into the *œsophagus*, and sometimes through the whole of the alimentary canal, propagating the putrefaction, and often exhausting the patient by a *frequent diarrhœa.*

SWELLING OF THE GLANDS.

The acrid matter poured out in the fauces being again absorbed, *frequently* occasions *large swellings* of the *lymphatic glands* about the neck, and sometimes to such a degree, as to occasion *suffocation.*

AFFECTION OF THE LUNGS AND TRACHEA.

It is seldom that the *organs of respiration* escape entirely unhurt, and very often the inflammatory affection is communicated to them. From dissections it appears, that, in the *Cynanche maligna*, the larynx and trachea are often affected in the same manner as in the *Cynanche trachealis;* and it is probable, that, in consequence of that affection, the *Cynanche maligna* often proves fatal by such a sudden suffocation as happens in the proper *Cynanche trachealis;* but there is reason to suspect, that, upon this subject, dissectors have not always distinguished properly between the two diseases.

SYMPTOMS WHEN MILD.

These are the several fatal terminations of the *Cynanche maligna;* but they do not always take place. Sometimes the ulcers of the fauces are of a *milder nature;* and the fever is *more moderate*, as well as of a *less putrid kind.* And when, upon the appearance of the efflorescence on the skin, the fever suffers a remission; when the efflorescence continues for three or four days, till it has spread over the whole body, and then ends by a desquamation, giving a further remission of the fever; this often entirely terminates by *gentle sweats*, on or before the seventh day; and the rest of the disease terminates in a few days more, by an excretion of sloughs from the fauces; while sleep, appetite, and the other marks of health, return.

THE METHOD OF CURE.

In the cure of this disease, its *sceptic* tendency is chiefly to be kept in view. The *debility*, with which it is attended, renders *all evacuation by bleeding* and *purging improper*, except in a few instances where the debility is less, and the inflammatory symptoms more considerable.* The fauces are to be *preserved* from the effects of the *acrid matter* poured out upon them, and are therefore to be *frequently washed out* by *antiseptic gargles*† or *injections;* and the *sceptic tendency* of

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* These cases are so rare, as hardly ever to exist, and when suspected, a consultation is desirable, before such a practice should be attempted. Bleeding or purging here has, in a few hours, proved fatal.

† When the violence of the symptoms is moderate, and when the

the *whole system* should be guarded against, and corrected by internal *antiseptics*, especially by the *Peruvian bark* given in substance, *from the beginning*,* and continued through the course of the disease.† *Emetics*, both *vomiting* and *nauseating*,

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ulceration is slight, sage tea, or tea made of rose leaves, or both together, may be sufficient. A gargle made of a pint of sage and rose tea, three spoonsful of vinegar, and one spoonful of honey, has been found as efficacious as any of the sharper antiseptics with the mineral acids. Dr. Fothergill's gargle is,

R. Decoct. pectoral. unc. 12, cui inter coquendum, adde
Rad. contrayerv. contus. unc. half.
Liquori colato admisce,
Acet vin. alb. unc. 2.
Tinct. myrrh, unc. 1.
Mel. opt. dr. 6.

But he often used it with a drachm of the Mel Egyptiacum dissolved in two ounces of it.

The Mel Egyptiacum is a very harsh application, and ought to be cautiously used. If the sloughs cast off so slowly as to require a powerful application, it is better practice to touch them with Mel Egyptiacum by means of an armed probe, than to use gargles, in which it is an ingredient. In this disease, a strict attention must be given to the use of gargles and injections for the throat, because the cure seems to depend in part, on procuring a discharge from the glands of the fauces which these gargles induce, and also because they are the only means of retarding the progress of the ulcers.

* This practice is strongly reprobated by Dr. Fothergill. Vide Discoveries since the time of Dr. Cullen, page 189.

† The quantity of bark given ought to be very considerable, viz. as much as the stomach and intestines can possibly bear; half a drachm or two scruples every hour, with a glass of good Port wine. A scruple of confectio aromatica, joined with each dose of the bark, has a double effect of making the bark less nauseous, and of preventing, in some

prove *useful, especially when employed early in the disease.** When any considerable tumour occurs, *blisters*† applied *externally* will be of service, and, in any case, may be fit to moderate the internal inflammation.‡

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measure, a tendency to diarrhœa; but opium is a sovereign remedy for removing this symptom (viz. diarrhœa), when it is actually present, a few drops being given at each time of taking the bark.

In administering the bark, great care must be taken to avoid a diarrhœa, which is a very dangerous symptom in any period of the disease, but especially after the third or fourth day, when the patient is in a considerable state of debility.

As children are more frequently attacked with this disease than adults, it is sometimes extremely difficult to prevail on them to take a sufficient quantity of this necessary and valuable, though nauseous medicine. In these cases, glysters, with powdered bark, have been used with very great success. Two drachms of the fine powder may be given in five or six ounces of barley-water, every three or four hours, to very young children, and half an ounce, or six drachms, to children of eight or ten years old, in three quarters of a pint of barley-water. If the first glyster comes away too speedily, two or three grains of opium may be added to the subsequent glysters.

* Nothing can be more useful than an emetic of one grain of tartarized antimony, to fifteen of ipecacuanha, as it brings up the putrid matter, which, when it passes down into the intestines, disturbs them, and brings on putrid fever.

† Much danger arises from the application of blisters, if repeated, and they are always painful to children. In adults, a blister half round the neck should be applied, but with children, the following liniment is best:

Illinatur linimentum carbonatis ammoniæ, vel linimentum camphora compositum in partem affectam sextis horis.

‡ In addition to the method of cure here delivered, it may be proper to observe, that, as the cure depends much on the removal of every thing putrid from the patient, it is absolutely necessary to have the room

well ventilated, but not with cold air. The reason for this precaution is, that the patient always complains of the least admission of cold air, becoming sick and oppressed, probably in consequence of the sudden disappearance of the efflorescence which always accompanies the disease. The linen ought frequently to be changed, the patient kept clean, the mouth and throat frequently washed, and great plenty of liquid vegetable nutriment must be given, with generous wine.

"An hemorrhage from the nose, mouth, or ears, very frequently occurs in the later stages of a malignant sore throat. This discharge is by no means critical, but always a dangerous symptom, and must be stopped with the utmost expedition. It is the consequence of some arterial branch being corroded by the mortification. If the hemorrhage withstands the usual means of tents dipped in vinegar, or a solution of alum,

R. Aluminis purificati, dr. 1.
Aceti communis,
Aquæ puræ, singulorum, unc. 8.
Fiat solutio.

recourse must be also had to opium and bark; and the Port wine must be given sparingly.

"In the advanced stages, a diarrhœa frequently appears, especially in children; it proceeds from the putrid and acrid matter of the ulcers being received into the intestines. It can only be prevented, or effectually removed, by a careful attention to keep the mouth as clean as possible, and the patient must take a few drops of laudanum; if vomiting comes on, the saline draught must be given every half hour.

HAUSTUS SALINUS EFFERVESCENS.

R. Potassæ carbonatis, scr. 1.
Aquæ cinnamomi, dr. 2.
—— distillatæ, dr. 8.
Syrupi aurantii, dr. 1. ss.
Fiat haustus, cum cochleare magno succi limonis, in actu effervescentiæ, sumendus."

Vide Dr. Hooper's Physician's Vade Mecum, one of the best books a student can possess, being the result of great knowledge, and practice.

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN.

DOCTOR FOTHERGILL's PRACTICE.

This great physician condemns the early use of wine and bark in the *Putrid sore throat*, as recommended by Dr. Cullen, and no one had more experience, or paid more attention to this particular disease. In his valuable treatise on the subject, this amiable physician says, It is indeed to be feared, that the too early use of bark and wine, often proportioned to the alarm of the practitioner and family, has hurried many to an untimely grave. Although in the progress of this disease, these may be indicated to keep up the tone of totally enervated vessels, if I may be allowed that expression, yet in the early stage they have, and must do abundant mischief.

I cannot refrain from observing, that a sort of fatality has attended the treatment of diseases termed Malignant; I mean the general belief, that medicines called Alexipharmic, or Cordial, are alone able to overcome malignity, in whatever shape it may appear. Upon what principles of philosophy or chymistry those practitioners proceed, who have adopted such ideas, they best can tell: that they continue to entertain them against the evidence of the most glaring facts, besides the want of success in many instances, is what gives me most concern, and will, I doubt not, with candid minds exculpate me, not only for the strictures I have made on the present method of treating putrid fevers in general,

but also for any I shall make on the usual management of the malignant sore-throat in several important particulars! and the rather, as I persuade myself they will see how much I am disposed to fall in with their ideas where they are established on solid principles, and where manifest success, as well as sound physiology, give a sanction to their utility.

If it be urged that success has attended this practice, the fact seems to be, that in mild cases an improper mode of treatment is not highly detrimental: it is only in the more dangerous states of the disease that we can do much good or much harm. And I am ready, says Dr. Withering, to confess, that in two or three of the first bad cases I saw, misled by so many marks of putrescency, I early gave the bark; but the consequences were not so much as could justify a continuation of its use.

VOMITS RECOMMENDED.

If patients are treated properly from *the first*, with one or two vomits, the inflammation of the fauces is prevented from running so high, as to effuse their contents, and no sloughing appears, or if it does, it never increases. But when that inflammation is still further increased by large and frequent doses of bark, and wine often in the intervals, it is truly melancholy afterwards to witness how the tumefaction is increased, and how rapidly the whole lining of the fauces is converted into an offensive slough.

Upon the whole, it appears then, that the same analogous reasoning applies to this as the other morbid poisons, and the indication first to be observed is that of a *vomit*.

A purge should follow the vomits, then the bark and wine.

This should be repeated, after which a cathartic may be advisable, and now it may become necessary to fortify the strength of the patient, so as to master the assaults of this insiduous and dangerous enemy, by means of bark, wine, serpentaria, opium, and other medicines of this class.

ATTENTION TO THE ULCERS REQUIRED.

The ulcers in the throat demand our early and constant attention, as

a considerable loss of substance cannot here be suffered without immediate danger to life itself, or the most injurious consequences to the future action of the parts, if the patient survives

TWO KINDS OF ULCERS.

Where the disease is of the mildest kind, a superficial ulceration only is observable; which may easily escape the notice of a person unacquainted with it. A thin, pale, white slough seems to accompany the next degree: a thick, opaque, or ash-coloured one is a further advance; and if the parts have a *livid* or *black* aspect, the case is still worse. These sloughs are not formed of any foreign matter spread upon the parts affected as a crust or coat, but are real mortifications of the substance; since, whenever they come off, or are separated from the parts they cover, they leave an ulcer of a greater or less depth, as the sloughs were superficial or penetrating.

IN MILD CASES, A COMMON GARGLE BEST.

Where the disease is mild, the symptoms favourable, the sloughs superficial, or scarce perceptible, it may be sufficient to order a gargle of sage-tea, with a few rose leaves added in the infusion; three or four spoonfuls of vinegar may be mixed with half a pint of the tea, and as much honey put to it as will leave it agreeably acid.

GARGLE TO BE USED IN BAD CASES.

But where the symptoms are urgent, the tendency to putrefaction great, the sloughs large and thick, and the breath offensive, recourse must be had to more efficacious remedies: a composition like the following, varied only as the patient's age and the circumstances of the disease required, has in general been attended with very good effects. The proportion here given may be used for adults, and the more active parts lessened for younger subjects.

℞. Decoct. Hordei, unc. 12.
Cui inter coquendum adde rad. contrayerv. contus. unc. 6.
Liquori colato admisce acet. vin. alb. unc. 2.
Tinct. Myr. unc. 1.
Mel. opt. dr. 6. f. gargarisma.

INJECTION WITH A SYRINGE RECOMMENDED.

As the parts about the gullet are frequently so much affected, as to render it painful or impracticable for the sick themselves to make use of the gargle so freely as they ought, it is commonly ordered, that a few spoonfuls of this liquor, made somewhat warm, should be very often injected into the fauces with a small syringe; and especially before the patient swallows any thing, in order to wash off as much as possible the putrid sordes adhering to the ulcers, and *prevent it from passing into the stomach and bowels.* In young subjects this method is the more necessary, as they do not always know how to manage a gargle to any purpose, did the soreness of the parts permit them to do it.

RATIONALE OF THE USE OF GARGLES.

As so much depends upon the frequent use of gargles, or rather of injections,* a strict attention to this affair can scarcely be too strongly enjoined on those who have the care of the sick committed to them; since

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* The following mercurial solution is strongly recommended by Mr. Townsend, upon the authority of Mr. Wathen.

℞. Hydr. purif.
Hydr. muriat. aa unc. 1.
Acet. vin. distil. unc. 8.
Agita per horam totam, et post horas duas cola, colaturæ adde acet. vin. q. s. donec cum spir. cor. cerv. nihil dejecerit.
A bit of lint rolled on a probe, and made moist with this, is to be applied once a day to each ulcer.

an assiduous repetition of these lotions not only promotes a discharge from the glands of the throat, which is probably of great use, but retards the progress of the ulcers, by washing off the putrefactive corroding virus, and prevents a large train of very dangerous symptoms.

SIR WILLIAM FORDYCE'S PRACTICE.

Reading a pamphlet, published in 1664, by one Constantine Rhodocaracides, on the great virtues of the internal and external use of muriatic acid, I was induced from this, says Sir William Fordyce, to use it internally in all putrid fevers and malignant diseases; and this I have done with continued success ever since, especially where I found the tongue black and dry, with a black glare on the teeth, and the worst sort of sore-throat; and it has proved, in truth, wonderfully efficacious on such occasions, in checking the dyscrasy of the humours, in restoring the vital powers, that are more or less broken down according to the degree of putrefaction, and in changing the petechiæ from a purple to a brown, and still more diluted colour, till they become quite evanescent.

I might here mention, adds Sir William, a great variety of cases, to illustrate its surprising power in correcting the most putrid state of the juices; but shall confine myself to a few, which I hope will be sufficient.

The Earl of Bute used often to mention how sensibly he felt the salutary effects of the mel-rosæ, to which was added the spirit of sea-salt,* when applied to his tonsils by Sir William Duncan, in the year 1760, when his lordship was seized with a *malignant sore-throat*, when many, even adults, fell sacrifices to this disorder. This was among the first fruits of so invaluable a remedy.

When the late Earl of Morton charged me with the care of the present Lord, while a youth, labouring under the same distemper, I comforted his Lordship extremely in the hope of preserving his son, if I could have time to pickle his juices with the spirit of sea-salt; which I did very

* An ounce of the mel-rosæ to sixteen drops of the muriatic acid.

largely, and it succeeded. After this, he recommended me warmly to those of his friends who required such pickling in similar cases.

The children of Mr. Jeacock, Belton-street, Long-acre (attended by Mr. Toosey, apothecary, in that neighbourhood), were seized with all the worst symptoms of the malignant sore-throat. They were recovered in the same manner, to the amazement of the father and the apothecary.

Mr. Gallini's son had the putrid sore-throat and scarlet fever, in the most violent manner I had ever seen; he was covered all over with petechiæ. He owed his recovery to the abundant use of the muriatic acid. He alo lost his skin like a snake. It was stripped off his hands and fingers like gloves, which I carried home with me.

Having been requested, when it was too late, to look in on Miss Grace of Cornhill, I found her dangerously ill of the malignant sore-throat, with petechiæ and delirium. I directed the usual medicines, as bark, Mindererus's spirit, and camphire. When I visited her next morning, a nurse and child were sitting on the bed; of which I expressed the highest disapprobation, from a fear of the child's catching the infection. When I returned I found Miss Grace a corpse; and the child died that morning. Three female servants had taken to their beds, with symptoms of the malignant sore-throat, and innumerable petechiæ. Their tonsils and parotid glands were swelled externally to an extraordinary height, and their hands, up to the wrist, were as purple as violets. From the quantity of bad symptoms, theirs were the very worst cases of the malignant sore-throat I have ever witnessed; yet they all recovered in the course of three weeks, by pursuing the same plan. To prevent the spreading of this disease in the family, I took every possible precaution by ventilation and fumigation with vinegar, which succeeded to my wish.

Sir William Fordyce observes generally, that in a great military hospital which he superintended during nineteen years, not one died of *putrid fever*, or *putrid sore-throat*, although many had these disorders in their worst form.*

Sir William concludes with observing, that where there was a loose-

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* This is a very strong assertion, and deserves the most serious attention from practitioners.

ness, he generally corrected the irritating humour with whey made in the following manner:

R. Lact. vaccin. lb. $1\frac{1}{2}$.
Aquæ puræ, lb. $\frac{1}{2}$.
Simul ebulliant; dein admisce vini Rhenani veteris, vel vini albi cujusvis Hispanici, unc. 2. succ. limonior. unc. 1. ut fiat serum.

Or he gave lemonade, or tamarind tea, or imperiale. I never, he adds, saw the looseness treated in this manner do hurt, though the purging is commonly dreaded as the greatest scarecrow in the malignant sore-throat.

DR. CURRIE'S* PRACTICE.

This eminent physician says, that this disorder in the first twelve or sixteen hours of the attack may be extinguished, by plentiful affusions of cold water, after which the patient is put to bed, and then given wine, so that a copious perspiration is induced. He says that fifty out of fifty-two cases succeeded in which this practice was early pursued.

DR. TMOMAS'S PRACTICE.

In the year 1787, at which period I was in the West Indies, this disease prevailed in the island of Saint Christopher's, as an universal epidemic among children, and a vast number of them fell martyrs to it, in spite of the utmost endeavours of the profession to save them, when at last the most happy effects were derived from the use of a remedy, the basis of which was Cayenne pepper. The medicine was prepared by infusing two table-spoonfuls of this pepper and a tea-spoonful of salt, in half a pint of boiling water, adding thereto the same quantity of warm vinegar. After standing for about an hour, the liquor was strained through a fine cloth, and two table-spoonfuls were given every half hour.

The speedy and good effect produced by the use of this medicine in

* A late eminent Physician of Liverpool.

every case in which it was tried, evidently points out the utility of giving warm aromatics, which will bring on a timely separation of the sloughs, as well as other antiseptics, to correct the tendency in the parts to gangrene.

Since the period above mentioned, many practitioners have become vouchers for the very beneficial effects which were derived in various instances of *cynanche maligna* from this medicine. My own experience induces me to speak well of it.

To assist the effect of the pepper remedy, it will be highly advisable to give the bark of cinchona at the same time in doses of from two scruples, to a drachm, every two hours; and if the inflammatory symptoms do not run high, it may be mixed in a little Port wine. Should the stomach not be able to retain the powder, we may then substitute the extract or strong decoction or infusion.

In *cynanche maligna*, a junction of the muriatic acid with the bark of cinchona, as advised under the head of *Typhus Gravior*, or of the oxygenated muriatic acid, as noticed under that of *Scarlatina*, will be very proper. Where we give these acids in considerable doses, it may be necessary to add a few drops of *tinctura of opii* to each, in order to prevent any disagreeable effect on the stomach and bowels from ensuing.

To check the septic tendency in the parts, as well as to remove the acrid matter which is secreted, it will be necessary to wash out the fauces with some proper gargle,* making frequent use of the pepper

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* R. Mel. Rosæ. unc. 1.
Decoct. Hordei. unc, 10.
Tinct. Myrrh. unc. ss.
Acet. Optim. unc. 1. M.
ft. Gargarismus.

Vel.

R. Decoct. Cinchonæ unc. vi.
Acid. Muriat. dr. 1.
Tinct. Cinnam. Compos. unc. ss.
—— Myrrh. unc. 1. M.

remedy in the same manner; but as young children cannot be prevailed on to gargle, it ought to be injected into the mouth and throat with a syringe. After washing the parts in this manner, the steams arising from warm vinegar and water may be received into the fauces by means of an inhaler.

Oxygen gas may also be inhaled by adults. Where there is any difficulty in inducing the patient to sit up in bed to inhale this gas, or we are not furnished with the necessary apparatus, we may substitute the following method, which perhaps may answer equally well. Cause the windows and doors of the person's apartment to be closed, and then taking a chafing-dish with some live coals, throw into it half an ounce of purified nitre in powder, which will fill the room with a thick white cloud, that will continue for a considerable time. This process ought frequently to be repeated in the course of the day.*

Vel.

R. Decoct. Hordei Compos. unc. 12. cui inter coquendum adde.
Rad. Contrayerv. Contus unc. ss.
Liquori colato admisce.
Acid. Acetic. unc. 2.
Tinct. Myrrh. unc. 1.
Mel Rosæ unc. ss. M.

Vel.

R. Extract. Cinchon. dr. 1.
Vini Rubr. Generos. unc. 6.
Acid. Sulphur. dilut. dr. 1. M.

* The liberality of Dr. Thomas cannot be sufficiently praised. Never was there a physician who has more enlarged our notions of disease, and his practice, as being that of this climate, and the West Indies, merits the regard of *all classes* of practitioners, and his work will be anxiously studied by the medical students, to whom we strongly recommend his work. No practitioner should be without it.

SCARLET FEVER.

SCARLATINA.

WHETHER SCARLET FEVER AND PUTRID SORE-THROAT ARE THE SAME DISEASES.

It *may be doubted* if the *scarlet fever* be a disease specifically different from the *cynanche maligna* or putrid sore-throat. The *latter* is almost always attended with a *scarlet eruption*; and, in all the instances *I have seen* of what may be called *the scarlet fever*, the disease, in *almost every person affected*, has been *attended with an ulcerous sore-throat.*

A SCARLET FEVER WITHOUT SORE-THROAT.

This view of the matter may create some doubt; but I am still of opinion, that there is a scarlet fever which is a disease specifically different from the *cynanche maligna.* Dr. Sydenham has described a scarlet fever, which he had seen prevailing as an epidemic, with all the circumstances of the fever and eruption, without *its being accompanied with any affection of the throat;* at least he does not take notice of any such affection, which such an accurate observer could not fail to have done, if any such symptom, as we have common-

ly seen making a principal part of the disease, had attended those cases which he had observed.

THE PUTRID SORE-THROAT AND SCARLET FEVER DIFFER.

From these considerations, though it may appear that there is *some affinity* between the *cynanche maligna* and *scarlatina anginosa*, it will still remain probable that the two diseases are *specifically different.** I have been at some pains to establish this opinion, for I find, that those *two diseases* require a *different treatment;* and I therefore now proceed to mention more particularly the circumstances of the *scarlatina anginosa*.

TIME OF APPEARANCE OF THE DISEASE, AND SYMPTOMS.

This disease commonly appears about the beginning of *winter*, and *continues throughout the season*. It comes on with some cold shivering, and other symptoms of the fever which usually introduces the other exanthemata. But here there is *no cough* nor the *other catarrhal symptoms* which attend the *measles*; nor is there that *anxiety* and *vomiting* which com-

* By most physicians *scarlatina* and *cynanche maligna* have however been considered as distinct in their nature, but from the observations which I have made, I am induced to look on them merely as modifications of the same disease, for I have noticed it under all its different forms in the same epidemic, and even in the same family from the same contagion. It is probable that when the scarlet-fever appears in mild autumnal or winter months, it takes on more the character of the cynanche maligna, or putrid sore-throat.

monly introduce the *confluent small-pox*, and which more certainly introduce the *Cynanche Maligna*.

STATE OF THE FAUCES.

Early in the disease, *some uneasiness is felt in the throat;* and frequently the *deglutition is difficult*, generally more so than in the *Cynanche Maligna*. Upon looking into the fauces, a *redness* and *swelling* appear in colour and bulk approaching to the state of these symptoms in the *Cynanche Tonsillaris*; but, in the *Scarlatina*, there is *always more or less of sloughs*, which seldom appear in the Cynanche Tonsillaris; and the *sloughs* are commonly *whiter* than in those in the *Cynanche Maligna*. While these appearances *are discovered in the fauces*, upon the *third* or *fourth* day a *scarlet eruption* appears *on the skin*. This eruption is commonly more considerable and universal than in the *Cynanche;* but it seldom produces a remission of the fever. The eruption for the most part remains till the *third* or *fourth day after its first appearance;* but then goes off, ending in a *meally desquamation*. At this time the *fever* usually subsides; and generally, at the same time, some degree of *sweat* comes on. The *sloughs* on the *fauces*, which appeared early in the disease, continue for some days, but then falling off, discover the swelling abated, and an *ulcer* formed on *one* or *both tonsils* showing a *laudable pus;* and soon after the *fever* has subsided, *these ulcers heal up entirely*.

HOW IT DIFFERS FROM THE PUTRID SORE-THROAT.

For the most part this disease has much less of *coryza* attending it than the *Cynanche Maligna;* and, when there is a *coryza* attending the *Scarlatina*, the matter discharged is *less*

acrid, and has not the *fetid smell* which it has *in the other disease.*

OF THE DROPSY WHICH FOLLOWS SCARLET-FEVER.

In the *Scarlatina*, when the eruption has entirely disappeared, it frequently happens, that, in a few days after, the whole body is affected with an *anasarcous swelling*; which, however, in a few days more, gradually subsides.

HOW MILD CASES SHOULD BE TREATED.

We have thus described the most common circumstances of the *Scarlatina Anginosa;* and have only to add, that during the time of its being epidemic, and especially *upon its first setting in*, there are always a *few cases* in which the circumstances of the disease approach very nearly to those of the *Cynanche Maligna*; and it is only in these instances *that the disease is attended with any danger.*

When the *scarlet fever* appears, *without any affection of the throat*, the treatment of it is *very simple*, and is delivered by Dr. Sydenham. An *antiphlogistic regimen** is commonly all that is *requisite*; avoiding, on one hand, the application of *cold air*; and on the other, any *increase* of *external heat.*

WHEN BLEEDING MAY BE EMPLOYED.

In the ordinary state of the *Scarlatina Anginosa*, the same treatment is, in most cases, sufficient; but as here the fever

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* The antiphlogistic regimen must not however be carried too far, lest we induce a state of debility that may prove hurtful.

is commonly more considerable, and there is likewise an affection of the throat, some remedies may be often necessary. When there is a pretty high degree of fever, with a full pulse, and a considerable swelling of the tonsils, *bleeding* is very proper, especially *in adults*; and it has been frequently practised with advantage: but as, even in the *Cynanche Tonsillaris*, much *bleeding* is seldom necessary; so, in the *Scarlatina*, when the state of the fever and the appearances of the fauces render the nature of the disease ambiguous, *bleeding* may be omitted; and, if not altogether avoided, it should at least *not be large*, and ought *not to be repeated*.

CURE OF THE MALIGNANT KIND.

With respect to *the cure of this disease*, when the *symptoms* of it are nearly the same with those of the *Cynanche Maligna*, it requires exactly the same treatment as before directed.

VOMITING AND PURGING.

Vomiting, and especially *nauseating doses of emetics*, notwithstanding the inflamed state of the fauces, have been found *very useful* in this disease. An *open belly* is proper in every form of this disease; and when the nauseating doses of emetics operate a little downwards, they are more serviceable.

GARGLES.

In every form of the *Scarlatina Anginosa*, through the whole course of it, *detergent gargles** should be employed, and more

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* The detergent gargles were before described. Tincture of roses is generally used, and in most cases answers every intention: if, however, the ulceration is considerable, and the sloughs do not easily cast off, recourse must be had to Dr. Fothergill's gargle, described before.

or less as the quantity of sloughs and the viscid mucus in the fauces may seem to require.

WHEN BARK SHOULD BE EMPLOYED.

Even in the *milder states* of the *Scarlatina Anginosa*, it has been common with practitioners to exhibit the *Peruvian bark* through the whole course of the disease; but we are assured, by much experience, that in such cases it may be *safely omitted*, though in cases any way ambiguous *it may not be prudent to neglect this remedy*.

METHOD OF CURING THE DROPSY.

The *anasarcous swelling*, which frequently follows the *Scarlatina Anginosa*, seldom *requires any remedy*; and, at least, the *purgatives* so much inculcated, and so commonly exhibited, soon take off the *anasarca*.

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN.

DOCTOR CURRIE'S* PRACTICE.

Though I have hitherto abstained from the use of the cold affusion in the phlegmasiæ in general, considering the presence of topical inflammation as in some measure precluding its use, yet I regard the subject as inviting inquiry in the case of the erysipelatous affections. In several of the exanthemata, it may be employed with striking advantage. No one will doubt that it is applicable to the eruptive fever of *small-pox*, a disease happily becoming rare among us; but it is not equally known, that it may be used with the most singular benefit in the eruptive fever of *scarlatina*, whose ravages are becoming every day more extensive and more familiar all over Europe, and for which no Jenner has yet arisen to propose a sovereign antidote.

Physicians are now pretty generally agreed, that *scarlatina* and *cynanche maligna* proceed from the *same contagion*, and are therefore *different degrees* of the *same disease*. The varieties of the *scarlatina* are, in fact, not greater than the varieties of the *small-pox*, to

* Dr. Currie, an eminent physician at Liverpool, since dead.

which they bear a very strict analogy. I now consider the same individual to be liable to scarlatina once only. I have indeed heard of one or two instances to the contrary; and Dr. Heberden is of opinion that such have occurred; but it must be admitted on all hands that they are rare, so rare indeed, as scarcely to require to be taken into account in our practice.

After some previous lassitude of uncertain duration, the *scarlatina anginosa* comes on with the usual symptoms of pyrexia,—shivering, pain in the back and head, nausea, and frequently vomiting; in proportion to the violence of these symptoms, and to the rapidity of their progress, is the danger of the disease. In an hour or two, *morbid heat* comes on, and speedily mounts up far beyond the temperature of health, this accession of heat being generally attended by a great sensibility, and bright red flushing over the whole surface of the body, with some stiffness of the neck, hoarseness of the voice, and rawness of the throat. If the thermometer be applied to the surface of the body, after the sensation of heat has become steady, the mercury will be found to rise to 105° and 106°, even in mild cases; and in more violent cases, to 103°, 109°, and 110°. I have known it to rise as high as 112°, the greatest heat I ever observed in the human body. It is on the first appearance of this high temperature, that it is necessary to act with vigour. *On our conduct, at this critical season, the patient's life often depends.*

The plan that I follow, if called in at this early period, is to strip the patient, and dash *four* or *five gallons* of the *coldest water* to be procured, over his *naked body*. This produces its usual cooling effects; but these are less permanent than in *typhus*. In one or two hours afterwards, the heat is often found, on examination, as great as before. The affusion is therefore *repeated* again and again, as the obstinacy of the heat may indicate. It is sometimes necessary to use it *ten* or *twelve times* in *twenty-four hours*. At the end of this time, but commonly earlier, the force of the fever is broken, and a few tepid affusions at longer intervals are sufficient to subdue it entirely. During this time, *cold water* and *lemonade* should be used as drinks, and the bowels opened, if necessary, by *calomel*. In a few cases, I have thought it advisable to assist the affusion by the *diaphoretic effect* of a solution of *tartarized antimony*. If left to myself, I use *no other means*. Considerable languor and debility, with a disposition to rest and sleep, follow this bold *arrestation* of the fever. I have seen these appearances

such as to excite some uneasiness, lest *coma* were coming on, or the powers of life sinking. But I never saw any real ground of alarm; and it is sufficient to keep up, if necessary, the heat of the surface of the body, and particularly of the extremities, by integuments, leaving the patient to that profound repose in which nature delights after violent agitations. On the *third day*, very generally, or sometimes *the fourth*, the patient is convalescent. If the throat be examined, there will be found some fulness and redness, and perhaps some *white specks* on the *tonsils*, but nothing that can be called *ulceration*. There are of course none of the secondary symptoms to which ulcerations give rise. In no instance did I ever see *delirium* come on after the use of the *cold affusion*. The peculiar dropsical affection indicated by the swelling in the hands and feet, does frequently occur, and sometimes there is a slight cough. These pass away of themselves, or, if necessary, may be removed by the *digitalis* and *crystals of tartar*.

In cases where, from the timidity of parents, or the apprehensions of those with whom we are called to consult, this *decisive practice* cannot be fully adopted, the tepid affusion may be had recourse to with very considerable, but inferior effect. It will not arrest the disease, unless very slight, but it will moderate its violence, by moderating the heat, and in the end producing sensible perspiration.

Where I do not see the *scarlatina anginosa* until the *third* or *fourth day*, or even *later*, if the morbid heat continue to be great, I use the *cool affusion*; if less considerable, the affusion *cold* or *tepid*. It is still an *excellent remedy*, diminishing heat and irritation, and producing quiet sleep; but though it lessens, it cannot arrest the disease. If the *ulcers* of the throat are foul, and the breath fœtid, an infusion of *Cayenne pepper*, stronger or weaker, according to the sensibility of the parts, makes an *excellent gargle*; half a grain of *pepper* to an ounce of water is a proper strength to begin with. It is *detergent* and *antiseptic* in a *high degree*: it may even be given *internally* with advantage, in those cases which sink into debility and putrescence, and where bark and wine are required.

In all the cases which I have seen during the last five years, amounting to upwards of a hundred and fifty, I have uniformly followed the practice which I have just described, and with a degree of *success* so *nearly invariable*, that I cannot *contemplate* it without *emotions* of *surprise* as well as of *satisfaction*. In the course of this time, I have had occasion

to combat the *scarlatina twice in public schools*, and in *both instances* was completely *successful*, not merely in the *recovery* of my patients, but in *stopping* the *violence* of the disease.

DR. THORNTON'S DISCOVERY.

Being physician to a public charity in a populous parish, and to the Sick Man's Friend, together with much private practice, and having a large family of my own, I paid particular attention to the *Scarlet Fever*. Notwithstanding every means were used to abate the inflammatory action of this fever at the onset, still, in many cases, it proved extremely fatal. Having lost in one week five patients in this disease, and such fatal instances often occurring, from a wide-extended practice, opportunities of examination after death frequently occurred, when I found that there was in the abdomen, head, and throat, strong marks of gangrene, and also inflammation; that when attention was paid to prevent the latter, death was incurred from wine, by the inflammation, which became increased, and where this was attempted to be arrested, that gangrene speedily took place; so that the medical practitioner was placed, like a mariner, betwixt Scilla and Charybdis. Hence I formed the resolution, in bad cases, to employ antimonial wine with digitalis, and in very large doses, which alone afforded any hopes of doing good. The digitalis at once removes the inflammation going on without weakening, and the antimony tends to the skin, and relieves the bowels; and I gave to children, about eleven years of age, 10 drops of *antimonial wine*, with 20 drops of tincture of digitalis, every four hours, and it was wonderful the good effect instantly produced. It acted like water poured upon a fire, so as to extinguish it in every instance. A fine opportunity occurred of trying this plan upon an extensive scale. The female charity-school of St. James, Hampstead Road, was attacked with this dire disease. As the girls were sitting upon the bench, sewing, quite well, apparently, they would suddenly fall, lose all strength, feel sick, have a violent head-ache, go to bed, and the scarlet effusion would immediately appear. This was attended with deep, brown sloughing ulcers on the tonsils, hot dry breath, and white tongue, with the papillæ rising up, like

seeds of a strawberry, and these very red. Never was any disease more violent, or alarm more excited. Numbers fell ill, and all had these deep ulcerations of the throat: under these circumstances, I was applied to, when I ordered the antimonial wine and tincture of digitalis, as before related, and a salivation ensued; and the moment this remedy was applied, the little patients were enabled to quit their beds, and seemed well. One case in particular excited much attention. A sweet little girl, of the name of Welling, aged 15, was a cripple: this arose from the following cause—one of the matrons of that charity, not content with the children's sewing, used to make them rise by *four in the morning*, to wash: this creature was found one morning asleep, and she was so beaten across the benches, as to be rendered a cripple for life. She was also very delicate. I intermitted the foxglove with her, and she was obliged to go to bed: I then renewed it, and she was then able to be up, and appeared well. It was remitted again, and all the symptoms of alarm came on. Many medical men saw these cases, and were much pleased with the result. It is best to begin with a vomit of antimonial wine at the onset, where this can be done, and a common gargle should be used also, with port wine in it.

The Governors of that charity met, and returned me by letter public thanks, so that it gave much celebrity to this new practice, which has been found always successful in every instance, where it has been since employed.

DR. THOMAS'S PRACTICE.

THE *oxygenated muriatic acid* is a remedy which has been much employed of late in scarlatina anginosa, and in many instances with a very beneficial effect, even at an advanced stage of the disease. The proper quantity for persons from fourteen to twenty years of age, will be about one drachm of it, in the course of twelve hours, divided into small doses, and given at proper intervals. For younger patients, a less quantity will be sufficient. As a vehicle to administer the oxygenant remedy in, we may use common gruel or a weak infusion of calumbo; and to prevent the *disoxygenating* influence of the light, the medicine should be placed in a dark situation, wrapped in paper. In administering it to the patient, it will be necessary to caution the

nurse or other attendant not to employ a spoon, lest a *poisonous fluid* be thereby conveyed into the stomach, by the *oxygen* rapidly oxydating the metal of which it is composed. We may also employ the *oxygenated muriatic acid* in the form of gargle * in scarlatina anginosa.

It may not be improper to mention, that camphor is a medicine much employed in scarlatina, and often with a seeming good effect; but more particularly in those cases where the pulse is very low, or the efflorescence disappears suddenly.

My usual plan of proceeding in both *scarlatina anginosa* and *scarlatina maligna* is to give a decoction of the bark of cinchona, with an equal quantity of wine and a few drops of *oxygenated muriatic acid*, and in two or three hours afterwards the draught † of *camphor* and *ammonia*, and so on alternately; which mode of proceeding I have found *very successful* ‡.

PREVENTION.

Schools should be immediately dispersed upon the appearance of scarlet fever, and after this disease is over, fumigation, with vitriolic acid poured upon salt, should be used, and the rooms white-washed, as in all violent and contagious fever.

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* R. Aq. Hordei. unc. 7.
Mellis Rosæ unc. 1.
Acidi Muriat. Oxygenat. dr. 1.
Tinct. Myrrh. unc. ss. M.
ft. Gargarisma.

Vel.

R. Piperis Indici scr. 1.
Aq. Ferventis unc. 5. Macera et Colaturæ adde
Decoct. Cinchon. unc. 3.
Acid. Muriat. Oxygenat. dr. 1. M.
ft. Gargarisma.

† R. Camphoræ gr. 4. Solve in
Spirit. Rectif. dr. ss. et adde
Aq. Puræ
—— Cinnam. āā dr. 6.
Ammoniæ Subcarbonat. gr. 15.
Syrup. Cort. Aurant. dr. 1. M.
ft. Haustus 4^{tis} horis capiendus.

‡ Vide Thomas's Practice of Physic, so often recommended by us.

THE MUMPS.

(CYNANCHE PAROTIDEA).

The Mumps is a contagious disorder, affecting only children. In this disease the fever is slight, which subsides upon the appearance of a tumour under the jaw, near its extremity, which goes on extending from the parotid to the maxillary glands, until it covers a great part of the neck, sometimes on one side only, but more commonly on both. The swelling continues to increase until the fourth day, from which period it declines; the tumour resolves, and the little sufferer is left, in general, very well.

This disorder is so very slight, for the most part, that nothing more is required than 20 or 30 drops of antimonial wine in a glass of water. To be repeated every five or six hours.

THE CHICKEN-POX.

VARICELLA.

This is among the number of animal poisons producing a disease, which is attended with so little danger, that it would not merit any notice, if it were not apt to be confounded with the small-pox, and thus give occasion to an opinion that a person might have the small-pox twice in his life; or it is apt to deceive into a false security those who have never had the small-pox, and make them believe that they are safe when in reality they are not. This eruption breaks out in many, according to Dr. Heberden, without any illness or previous sign; in others it is preceded by a little degree of chillness, lassitude, cough, broken sleep, wandering pains, loss of appetite, and feverish state for three days.

In some patients the chicken-pox make their appearance on the back; but this perhaps is not constant. Most of them are of the common size of the small-pox, but some are less. Dr. Heberden never saw them confluent, nor very numerous. The greatest number was about 12 in the face, and 200 over the rest of the body.

On the first day of the eruption they are reddish. On the second day there is at the top of most of them a very small bladder, about the size of a millet-seed. This is sometimes full of a watery and colourless, sometimes of a yellowish liquor, contained between the cuticle and skin. On the second, or, at the farthest, on the third day from the beginning

of the eruption, as many of these pocks as are not broken seem arrived at their full maturity; and those which are fullest of that yellow liquor very much resemble what the genuine small-pox are on the fifth or sixth day, especially where there happens to be a larger space than ordinary occupied by the extravasated serum. It happens to most of them, either on the first day that this little bladder arises, or on the day after, that its tender cuticle is burst by the accidental rubbing of the clothes, or by the patient's hands to allay the itching which attends this eruption. A thin scab is then formed at the top of the pock, and the swelling of the other part abates, without its ever being turned into pus, as it is in the small-pox. Some few escape being burst; and the little drop of liquor contained in the vesicle at the top of them, grows yellow, thick, and dries into a scab. On the fifth day of the eruption they are almost all dried and covered with a slight crust. The inflammation of these pocks is very small, and the contents of them do not seem to be owing to suppuration, as in the small-pox, but rather to what is extravasated under the cuticle by the serous vessels of the skin, as in a common blister. No wonder, therefore, that this liquor appears so soon as on the second day; and that, upon the cuticle being broken, it is presently succeeded by a slight scab. hence too, as the true skin is so little affected, no mark or scar is likely to be left, unless in one or two pocks, where, either by being accidentally much fretted, or by some extraordinary sharpness of the contents, a little ulcer is formed in the skin.

The principal marks by which the chicken-pox may be distinguished from the small-pox are,

The appearance, on the second or third day from the eruption, of that vesicle full of serum upon the top of the pock.

The crust, which covers the pocks on the fifth day; at which time those of the small-pox are not at the height of their suppuration.

Morton speaks of the chicken-pox as if he supposed it to be a very mild genuine small-pox. But these two distempers are surely totally different from one another, not only on account of their different appearances above-mentioned, but because those who have had the small-pox are capable of being infected with the chicken-pox; but those who have once had the chicken-pox are not capable of having it again, though to such as have never had this distemper, it seems as infectious as the small-pox. Dr. Heberden wetted a thread in the most concocted pus-like liquor of the chicken-pox which he could find; and after making a slight incision, it was confined upon the arm of one who had formerly had it; the little wound healed up immediately, and shewed no signs of any infection.

Remedies are not likely to be much wanted in a disease attended with hardly any inconvenience, and which in so short a time is certainly cured of itself: nevertheless, a few drops of antimonial wine given, so as to produce perspiration more speedily and certainly, extinguishes this mildest of all the animal poisons.

PUERPERAL FEVER.

ORIGIN.

The late Dr. Thomas Young, professor of midwifery in the university of Edinburgh, although he printed nothing on the subject of the Puerperal Fever, wrote a very ingenious dissertation respecting it, which was read in the Philosophical Society of Edinburgh. In that dissertation, after giving a very accurate account of the symptoms of the disease, which coincides very nearly with the account given by others, he endeavours to shew, that the puerperal fever, strictly so called, is, in every instance, the consequence of *contagion*; but he contends, that the *contagious* matter of this disease is capable only of producing its effect, in consequence of a peculiar predisposition given by delivery and its consequences. In support of this doctrine, he remarks, that for many years the disease was altogether *unknown* in the lying-in ward of the Royal Infirmary at Edinburgh; but that after it was once accidentally introduced into the hospital, almost every woman was, in a short time after delivery, attacked with it; although prior to her delivery, she may have lain even for weeks together, not only in the same ward with the infected, but even in the very next bed. He remarks, that it was only eradicated from the hospital in consequence of the wards

being entirely emptied, thoroughly ventilated, and new painted. After these processes, puerperal females in the hospital remained as free from this disease as formerly. The puerperal fever, according to Dr. Young, has very generally a strong tendency to the typhoid type; although he allows, that in the beginning it is not unfrequently attended with inflammatory symptoms, and even with topical inflammation, particularly in the intestinal canal. On this idea, he considers the puerperal fever as admitting of the same variety of treatment with other affections depending on contagion, in which sometimes an inflammatory, sometimes a putrescent tendency prevails; such, for example, as small-pox or erysipelas. But from the prevailing putrescent tendency in this affection, he considers the free access of cool air, with the liberal use of antiseptics, as being very generally requisite.

SYMPTOMS.

This fever is most commonly incident to women within 48 hours after delivery, though it may supervene on the fourth or fifth day, and sometimes considerably later. It is preceded, like other fevers, by a rigour, which is commonly violent; and, when happening during the time of labour, may be confounded with the pains of parturiency. In its earlier stage, it is attended with the signs of inflammation. A great pain is felt in the back, hips, and the region of the uterus; which, in the part last mentioned, is accompanied with the sense of heat and throbbing. The patient is frequently troubled with a tenesmus; and the urine, which is

very high coloured, is discharged in small quantity and with pain. At the first attack of the fever, the woman is generally seized with a vomiting of porraceous matter, as in the cholera morbus, to which disease it then bears a strong resemblance. But instead of this symptom, there is sometimes only a nausea, or loathing at the stomach, with a disagreeable taste in the mouth. The belly swells to a considerable bulk, and becomes susceptible of painful sensations from the slightest impression. The tongue is generally dry, though sometimes moist, and covered with a thick brownish fur. At this period, if not at the very beginning of the disorder, a bilious or putrid diarrhœa, of a dangerous and obstinate nature, supervenes, and accompanies it through all its future progress; each motion to stool being preceded by a temporary increase, and followed by an alleviation of pain. Through the whole course of the fever, the patient is affected with great anxiety and dejection of spirits.

THE CURE OF THE PUERPERAL FEVER.

Physicians have been much divided respecting the proper treatment of this disease, as happens also in every other case of infection, for want of a due consideration of the laws of the animal economy.

OF BLEEDING.

The question that has been more than any agitated is that of bleeding. Dr. Leake, who published his observations on this disease, affirms, that venesection is the only remedy

which can give the patient a chance for life:- but, though it be the principal resource to be depended upon at the beginning of the fever, he very prudently observes, that it will seldom prove of service after the second or third day; and, if directed yet later, will only weaken and exhaust the patient. At this period the blood begins to be tainted by the absorption of the purulent fluid; and the fever, from being inflammatory, is changed into a putrid nature. Dr. Denman differs much from this gentleman, and thinks we may safely affirm, from experience, that for one who will be benefited by large bleeding, a much greater number will be injured, and that even almost irretrievably. Nor can this seem surprising, when we consider the situation of child-bed women. Experience in this, as in all other diseases, is the only unerring guide we can follow; and whoever regulates his practice by fact and observation, will be convinced that bleeding, especially in a larger quantity, is, in general, very far from being attended with success. Bleeding is seldom proper, except in women of plethoric constitutions, and in whom signs of inflammation rise high. Nor even in such patients ought it to be repeated without great caution, and the existence of strong indications. Bleeding, when used in proper circumstances, may unquestionably palliate the fever; but that it often shortens the duration of it, appears to be a matter of much doubt. On this account the practice becomes still more suspicious and exceptionable, when we consider that by venesection improperly used, the person's strength may be so far reduced as not to support the tedious looseness by which the disease is generally carried off. Though bleeding, however, ought in general to be used

with great caution, there are certainly a few cases in which it is both necessary and advantageous.—Thus far Dr. Denman.

PURGING.

I have the more readily given this disputation, as *the abstraction of stimuli* may perhaps be better performed by evacuating the primæ viæ, probably the first seat of this disease, as well as of other morbid poisons, than by shedding of the vital stream. On the subject of *bleeding* in contagious disorders, many high authorities have been adduced to shew its advantage; but then this must be early and plentiful, or the disorder being but partially subdued, there remains less of the vis vitæ, powers of life, to resist the influence of the morbid poison, and, therefore, unless strongly urged to it, I cannot but recommend great *caution* in the use of the lancet.

All authors, however, seem to be agreed, that evacuating the primæ viæ is proper. For this purpose, Dr. Denman uses the following recipe:

R. Antim. tartar, gr. 2.
Ocul. cancror præp. scr. 1.
Intimè misceantur. cap. gr. 2, vel 6, et repet. p. r. n.

That is, take of
Tartarized antimony, two grains,
Prepared crabs' eyes, one scruple.

Mix them. The dose is from two to six grains, to be repeated every two hours, until some sensible effect be produced.

Should the disease be abated, but not removed, (which sometimes happens) by the effect of the first dose, the same medicine must be repeated, but in a less quantity, till all danger be over: but if any alarming symptoms remain, he does not hesitate one moment to repeat the powder, in the same quantity as first given; though this be seldom necessary, if the first dose operates properly.

SALINE DRAUGHTS.

Frequent doses of the saline draughts ought also to be given, which not only promote the evacuation by the intestines, but likewise increase the salutary discharges of urine and perspiration. These medicines are particularly serviceable in subduing the remains of the fever, after its violence has been broken by the most efficacious remedies above-mentioned; but when they are used even in the decline of the disease, gentle laxatives of rhubarb and magnesia, as advised by Dr. Denman, ought to be frequently interposed, since, as he justly observes, without stools we can do little service.

TREATMENT OF THE SECOND STAGE.

In the second stage, or period, when the pulse becomes quick and low, bark and confectio aromatica, or columbo, may be given with great advantage.

DYSENTERY.

DYSENTERIA.

NECESSITY OF ATTENDING PARTICULARLY TO THIS DISEASE.

THE Dysentery, or Flux, being a disease so destructive to soldiers in camps and garrisons, and a constant attendant on all military operations, it is a medical inquiry of the utmost importance to investigate this disease with the utmost attention, in hopes of finding some method to put a stop to its devastation. It is a subject in which the welfare of mankind is deeply interested, and often the glory and honour of a nation. If the cause of humanity were not alone a sufficient motive to induce to this research, we need but turn our eyes on the political field; where we should behold the best concerted measures often defeated by its influence.

On the 23d of October, 1415, Henry the Fifth, with his English archers, would not have "affrighted the air at Agincourt*," if impetuosity had suffered the French to remain still: had the battle been delayed but another week, his whole army would have been ruined. He embarked with 50,000 men from Southampton, on the 18th and 19th of August, 1415, and landed at Havre de Grace on the 21st. He marched to Harfleur, besieged, and took it. During the siege, which was not six weeks from the time of his leaving England, he lost nearly half of his army by the bloody flux. *Two thousand died of it in one day.* Rapin says, the flux, which was got among his troops, had made, and still did

* This was called the battle of the men *without breeches*; for the English could not wear any on account of this disease.

make, such ravage, that not above the fourth part of his army were able to bear arms. This distemper had not seized the common soldiers only, but even the most considerable persons were not free from it. The Bishop of Norwich and the Earl of Suffolk were already dead of it. The Duke of Clarence, the king's brother, the Earl of Arundel, and several other officers of distinction, were so dangerously ill, that they were obliged to return to England in hopes of a cure.

When Europe coalesced in order to restore Louis to his throne, the Duke of Brunswick headed an army of 50,000 Prussians, to whom was attached 15,000 Austrians under General Clairfait, and a considerable body of Hessians, together with 20,000 French emigrants, chiefly officers, amounting in all to 100,000 effective men, and these entered France. To oppose these, Dumourier had only 17,000 men collected near the point from which the enemy were approaching in Luxembourg.

The Duke of Brunswick encamped his army at La Lun, a marshy ground in Champaigne, near to the camp of Dumourier. The rain fell in torrents, and the roads became almost impassable. Exposed in autumn to cold and moisture, there was a predisposition to take infection, and the filth alone of an immense body of men, stationary in the field in autumn, and compressed as this army must necessarily have been, was sufficient to give rise to every species of pestilence. This actually appeared, and the people died of the *flux* like rotten sheep. A more sudden or extensive scene of military disaster was perhaps never exhibited. Above ten thousand were ill at one time. The French would not engage with, or take prisoners, an enemy amongst whom a pestilence was raging. A truce was made for eight days, when the Duke found himself obliged to quit France. Thus this vast and wonderfully appointed force, which had taken almost three years in "dreadful note of preparation," was obliged to relinquish all the hopes they had set out with, and with difficulty were able to trace back their steps.

SYMPTOMS.

Dysenteries, says Sir John Pringle, sometimes appear upon first taking the field, but the cases are never so bad, nor nearly so frequent, as towards the close of summer, or in the beginning of autumn. At that time they become epidemic and contagious, prevail for about six weeks

or two months, and then cease. They are always worse after hot and close summers, especially in fixed camps, or when the men lie wet, after a march in warm weather.

The sure diagnostics of the dysentery are small but frequent stools of a slimy and frothy matter, a tenesmus, and gripings. Blood mixed with the fæces is a common, but not an inseparable symptom; for many have all the other marks without this, at least in the beginning; and others have blood in their stools, from various causes, without a dysentery. But whereas this distemper is mostly attended with blood, for that reason it has also the name of the bloody-flux.

The other symptoms are more casual. Sometimes a violent bilious fever will terminate in the dysentery; at other times, the previous fever is inconsiderable; and now and then we shall find the dysentery begin with scarce any feverishness at all.

In general, the fever attending the flux is of little consequence, till the disease has continued long, and the patient is exhausted; then it is of a low and malignant kind.

Streaks of blood denote the rupture of some small vessels in the rectum, but a more intimate mixture is a sign that the blood comes from a higher source. This evacuation of blood, which alarms most, is the symptom least to be dreaded; for though the oozing is constant, except in a few cases, the quantity of blood lost in the course of the disease is inconsiderable.

The fæces have all along a putrid smell, especially if mortification takes place, and then they are most infectious. The gripes are generally vague, but sometimes there will be a fixed spasm in one part, causing exquisite pain. Although a great deal of wind is evacuated, yet as it is soon regenerated, the gripes and flatulence become almost incessant. The stools are all preceded by sharp gripings, and succeeded by some little respite: but the motions being so very frequent, the patient can have no considerable ease, unless from opiates, sweating, fomenting the belly, or after a purge.

In the beginning, the stomach is usually affected with a nausea and sense of oppression; and though it is relieved by vomiting, yet the indigestion remains, by which all kinds of food turning either sour or putrid, more wind is produced, and the gripings are continued. A hiccup sometimes arises from this cause, and then is little to be dreaded; but in the

low or advanced state of the disease, when that supervenes, it is generally the sign of a mortification of the bowels, and fatal.

DYSENTERY AND PUTRID FEVER ARISE FROM THE SAME CAUSE.

It seems reasonable to suppose that the dysentery is owing to a cause little different from what produces the bilious fevers already described. The ancients deduced both from an abounding and corrupted bile: but how far that opinion is true, and how to be qualified in regard to fevers, has been already said. I shall only add, that in both cases the vitiated humours may be turned upon the primæ viæ. In the smaller intestines, they may be absorbed by the lacteals, and after producing a paroxysm, be partly discharged by sweat: but if the putrid fomes is conveyed to the cæcum and colon, it can neither be well absorbed, nor removed from thence, on account of the rugæ, cells, and flexures of those parts. The first case gives the idea of a fever; and the last that of a flux.

But however this be, it is plain that there is at first little difference between the causes of the two, considering, that the fevers begin to be frequent in camp whilst the dysentery still subsists; that the distempers sometimes change into one another *; that when any number of men are exposed to colds in autumn, part will be seized with a remitting fever, others with this flux, and perhaps a third sort will have a disorder compounded of both. Add to this, that the first symptoms are similar, and that the epidemic remitting and intermitting fevers of a more malignant kind, have often ended in a bloody-flux. Lastly, that such countries as are most subject to bilious fevers, are likewise most liable to the dysentery.

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* In proportion as the autumn grew cool, these fevers abated of their ardour, and formed more easily into intermittents; though still irregular, and of a bad kind. The dysentery was never general, but not uncommon; and it was observable, that those who were seized with it, usually escaped the fever; or, if any had both, it was alternately; so that when the flux appeared, the fever ceased, and when the first was stopt the other returned; whence it appeared, that though the two distempers were of a *different form*, they proceeded from *a like cause*.—Pringle.

Let us now proceed to give the practice of CULLEN in this disease.

EMPLOYMENT OF PURGES.—CAUTIONS.

The most eminent of our late practitioners, and of greatest experience in this disease, seem to be of opinion, that the disease is to be cured most effectually by *purging* assiduously employed. The means may be various; but the most *gentle laxatives* are usually sufficient; and as they must be frequently repeated, the most gentle are the most safe; this more especially as an inflammatory state so frequently accompanies the disease. Whatever laxatives produce an evacuation of natural fæces, and a consequent remission of the symptoms, will be sufficient to effectuate the cure. But if *gentle laxatives* shall not produce the evacuation now mentioned, some *more powerful medicines* must be employed; and I have found nothing more proper or convenient than *tartar emetic*, given in small doses, and at such intervals as may determine their operation to be chiefly by stool. *Rhubarb*, so frequently employed, is in several respects amongst the most improper purgatives.

VOMITS.

Vomiting has been held a principal remedy in this disease; and may be usefully employed in the beginning of it, with a view to both the state of the stomach and of the fever: but it is not necessary to repeat it often; and unless the emetics

employed operate also by stool, they are of little service. *Ipecacuanha* seems to possess no specific power; and it proves only useful when so managed as to operate chiefly by stool.

GLYSTERS.

For relieving the constriction of the colon, and evacuating the retained fæces, *glysters* may sometimes be useful: but they are seldom so effectual as laxatives given by the mouth; and acrid glysters, if they be not effectual in evacuating the colon, may prove hurtful by stimulating the rectum too much.

OPIATES CONDEMNED.

The frequent and severe griping attending this disease, leads almost necessarily to the use of *opiates*, and they are very effectual for the purpose of relieving from the gripes; but by occasioning an interruption of the action of the small guts, they favour the constriction * of the colon, and thereby sometimes aggravate the disease: and if at the same time the use of them supersede in any measure the employing of purgatives, it commonly does much mischief; I believe it indeed to be only the neglect of *purging* that renders the use of *opiates* very necessary.

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* Other practitioners, on the contrary, always begin with an *opiate*, which takes off the *spasm* of the intestinal canal, after which purges operate. It is the only safe practice, and the want of this knowledge has destroyed thousands. Vide Note *, p. 231.

FOMENTATIONS AND BLISTERS.

When the gripes are both frequent and severe, they may sometimes be relieved by the employment of a semicupium, or by a fomentation of the abdomen, continued for some time. In the same case, the pains may be relieved, and as I think the constriction of the colon may be taken off, by *blisters* applied to the lower belly.

BLOOD-LETTING.—CAUTION.

At the beginning of this disease, when the fever is any way considerable, *blood-letting*, in patients of tolerable vigour, may be proper and necessary; and, when the pulse is full and hard, with other symptoms of an inflammatory disposition, blood-letting ought to be repeated. But, as the fever attending dysentery is often of a putrid kind, or does, in the course of the disease, become soon of that nature, blood-letting must be employed with great caution.

DEMULCENTS.

Whether an acrid matter be the original cause of this disease, may be uncertain; but from the indigestion and the stagnation of fluids in the stomach, which attend the disease, it may be presumed, that some acrid matters are constantly present in the stomach and intestines, and therefore that *demulcents* may be always usefully employed. At the same time, from this consideration, that mild *oily matters* thrown into the intestines in considerable quantity always prove

laxative, I am of opinion that the *oleaginous demulcents* are the most useful*.

DIET.

As this disease is so often of an inflammatory or of a putrid nature, it is evident that the diet employed in it should be *vegetable* and *acescent*. Milk in its entire state is of doubtful quality in many cases; but some portion of the *cream* is often allowable, and *whey* is always proper†.

FRUITS.

In the first stages of the disease, the *sweet* and *subacid fruits*‡ are allowable, and even proper. It is in the more advanced stages only that any morbid acidity seems to prevail in the stomach, and to require some reserve in the use of acescents.

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* This is an excellent medicine:

℞. Ol. Amygdal, dr. 2.
Kali ppt. gr. 5.
Pulv. Tragacanth c, dr. 2.
Syr. Tolut. dr. 2.
Confect. Amygdal. dr. 2.
Aq. Rosæ, unc. 7.
Aq. Cinnam. dr. 4.
Ft. Mist. Cap. coch. larg. duo tertiâ quâque horâ.

† Arrow-root forms the best food. Vide also Note *, page 230.

‡ Especially ripe grapes and figs.

DISCOVERY

BEFORE THE

TIME OF DOCTOR CULLEN.

SYDENHAM'S PRACTICE*.

"Upon being called in to *any* case of dysentery, says Sydenham, I immediately direct *bleeding* in the arm, give an *opiate* the same evening, and the next morning this *gentle purging potion*, which I frequently use.

Take of tamarinds, half an ounce,
The leaves of sena, two drachms,
Rhubarb, two scruples and a half;

Boil them together in enough water to leave three ounces of strained liquor, in which dissolve
Manna,
And solutive syrup of roses, of each an ounce;

Mix them together, for a purging potion, to be taken in the morning, early.

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* Although Sydenham long preceded Dr. Cullen, yet his practice, as so widely differing from that of Dr. Cullen, will head this part of our work.

I commonly prefer this draught to an electuary made with a small quantity of *rhubarb*; for though this root be exhibited to evacuate acrimonious humours, yet unless a proper quantity of *manna*, or solutive syrup of roses be mixed with it, to quicken its operation, it avails little in curing a dysentery. And because it is certain that the gentlest cathartics sometimes increase the gripings, and occasion a general depression and disorder of the spirits during their operation, I therefore commonly give an *opiate* earlier than is usual after purging, viz. at any hour in the afternoon, provided it seems to have done operating; and this I do in order to quiet the disturbance I have raised *.

I repeat the cathartics twice more, interposing a day between each, and exhibit an *opiate* after every purge, at the time above-mentioned, and direct it to be repeated morning and night on the intermediate days, in order to diminish the violence of the symptoms, and obtain a respite whilst I am employed in evacuating the peccant humours. The opiate I chiefly use is *liquid laudanum* †, in the quantity of sixteen or eighteen drops in any cordial water for a dose.

The diet should be made of hartshorn shavings and the crums of white bread, of each two ounces, boiled in three pints of water to two, and afterwards sweetened with a sufficient quantity of fine sugar.

This method, adds Sydenham, exceeded all those I had hitherto experienced in conquering this disease, which, for the most part, yielded to the third purge.

But if it proved so obstinate as not to yield to these means, I gave the former *opiate* every morning and evening, till it went quite off; and the more effectually to conquer it, I have ventured to give a larger dose of *laudanum* than that above specified, viz. twenty-five drops every eight hours, if the former dose proved too weak to stop the flux. I likewise ordered a glyster made of half a pint of milk, and an ounce

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* A good practice, but wrong reasoning.

† *Laudanum Liquidum* SYDENHAMI est. R. Vini Hispanici, lb. 1. Opij, unc. 1, Croci, unc. 1. Pulv. Cinnamomi et Caryophillorum aa. dr. 1, infundantur simul in B. M. per duos vel tres dies, donec liquor debitam consistentiam adquirat.—Colatum servetur pro usu.

and half of *Venice treacle*, to be injected every day, which is in effect an admirable remedy in all kinds of loosenesses. Nor indeed have I hitherto found the least inconvenience happen from so frequent a repetition of *opiates*, (whatever mischief the unexperienced imagine will follow from hence) though I have known several who have taken them every day for some weeks, when the disease proved inveterate. But it must be noted here, that when the flux amounts only to a looseness, omitting bleeding and strong purging, it will suffice to give half a drachm of rhubarb, more or less, in proportion to the strength of the patient, every morning, made into a bolus, with a sufficient quantity of diascordium, adding to it two drops of oil of cinnamon; and exhibiting an opiate the following evening, *e. g.*

Take of Cinnamon water, one ounce,
Liquid laudanum, fourteen drops;
Mix them together.

In the meantime use the diet as above specified in the cure of the dysentery, and inject the glyster there commended every day, if there is occasion *."

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* Gelatinous broths, at the conclusion of dysentery, is found to be very excellent. There is an excellent recipe of this nature in Dr. Buchan. Take, says this physician, a sheep's head and feet with the skin upon them, and burn the wool off with a hot iron; afterwards boil them till the broth is quite a jelly. A little cinnamon or mace may be added, to give the broth an agreeable flavour, and the patient may take a little of it warm, with toasted bread, three or four times a day. A clyster of it may likewise be given twice a day. Such as cannot use the broth made in this way, may have the head and feet skinned; but we have reason to believe that this injures the medicine. It is not our business here to reason upon the nature and qualities of medicine, otherwise this might be shewn to possess virtues every way suited to the cure of a dysentery which does not proceed from a putrid state of the humours. One thing we know, which is preferable to all reasoning, that

We cannot conclude this section without noticing a frequent occurrence in dysentery; that is, a *constriction*. Sydenham, in treating of the epidemical dysentery in London, of 1669, 1670, 1671, and 1672, uses the words in so general a sense, that he has been attacked by some observers of trifles, for saying, at the setting-in of the dysentery in the first autumn, several had no stools at all, "*quamplurimi nullis omnino dejectionibus molestabantur.*" The fact was, the irritating poison occasioned a constriction of the intestinal tube both ways, and their contents were locked in at top and bottom, occasioning violent pain, while only mucus passes the constriction. Here the *opiate*, to relax the spasm, must be first given*, and the *purge follow*, and the removed *scybala*, or a congeries of hardened knobs, will discover the removal of the chief cause of this great intestinal disturbance.

CAUSE OF INFLAMMATION OF THE BOWELS.

When persons are said to die of this disorder, it is generally a *spasmodic attack*, from *acrimony* of feces in the *bowels*. Purgatives are used, but these do not unlock the *spasm*, but the contrary. More are employed, but without success. *Inflammation* is now *produced*: whereas, had an *opiate* been given *at first*, or *soon after* the purgative, or *along with it*, this disease would have been overcome. Should an *introsusception* have taken place, *crude quicksilver* is then the *only remedy*.

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whole families have often been cured by it, after they had used many other medicines in vain. It will, however, be proper that the patient take a vomit, and a dose or two of rhubarb, before he begins to use the broth. It will likewise be necessary to continue the use of it for a considerable time, and to make it the principal food.

* Gangrene often has ensued for want of this consideration.

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN.

VITRUM ANTIMONII CERATUM IN DYSENTERY.

We come now to consider those substances which possess OXYGEN, and among the first of these we will consider the pretensions of the *glass of antimony** in this disease; for I conceive that the wax can have very little efficacy in the preparation of the cerated glass of antimony.

This medicine, as far as I can learn, was first employed by Mr. Steel, late minister of Lochmaben, but kept as a secret. Twelve years ago Dr. George Young got the receipt, but did not use it for some time, distrusting it partly as a harsh medicine in appearance, partly because he had often been deceived in boasted specifics; till finding other medicines ineffectual in so frequent and cruel a disease, he began to try it cautiously, and found it to answer beyond expectation. After repeated experiments, he generously made the receipt public. I have tried it often myself in ordinary cases, and once in a dysentery of four years standing, with surprising success †.

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* Oxydum stibii sulphuratum vitreum.

† This report is made by Sir John Pringle, M. D. in Medical Essays and Observations, revised and published by a Society in Edinburgh.

Although I made no doubt of the public's confidence in any thing advanced by Dr. Young, a man of singular judgment and veracity, I have, notwithstanding, been at pains to collect together several testimonies of others concerning this medicine, that there may not in the least appear partiality in either the discoverer or recommender. I have been the more cautious this way, seeing this medicine of all others appears to promise the least of an anti-dysenteric, because no man would think of the glass of antimony, as the *specific* in dysentery. *And that it is truly a* SPECIFIC, *appears from hence, that it cannot be said to cure by its purgative quality, because it sometimes acts as an emetic, without purging; nor can it be said to cure as an emetic, because it sometimes purges without vomiting. Nor, lastly, can it be said to act as an evacuant in general, because I and others have known it to cure without any sensible evacuation at all.*

THE RECEIPT OF THE MEDICINE, AND OBSERVATIONS UPON ITS OPERATION, BY DR. YOUNG.

Take glass of antimony in powder one ounce, bees wax one drachm, melt the wax in an iron ladle, then add the powder; set them on a slow fire without flame, for the space of half an hour, continually stirring them with a spatula; then take it from the fire, pour it upon a piece of clean white paper, powder it, and keep it for use.

When I prepared this quantity, it lost a drachm of its weight. The glass melts in the wax with a very slow fire.

I was at first so scrupulous in preparing the medicine, that I wished the degree of heat had been assigned, as well as the space of time necessary in the preparation; but I have since found, that I both vary the time and degree of heat, without perceiving any difference in the operation of the medicine.

After it has been about twenty minutes on the fire, it begins to change colour, and in ten more, comes pretty near the colour of snuff; by that colour, I know it is sufficiently prepared, without attending to the degree of heat or space of time.

The ordinary dose for an adult is ten or twelve grains; but, for the greater safety, I commonly begin with six; to a strong man I have

given a scruple, which sometimes works so mildly, that I have thought it too weak.

To weakly constitutions, I give five or six grains, increasing the dose afterwards, according to the operation.

To a boy of ten years of age I give three or four grains.

To a child of three or four years, two or three.

This medicine has been practised with success for the dysentery, and the preparation of it kept a secret for many years.

When first it was communicated to me, I thought it so harsh and dangerous a medicine, that I had not courage to try it for some years, and even then I began the dose with one grain, and increased it gradually to twenty, which is the largest I have yet given. As soon as I was convinced, by a number of experiments, that it was both mild and efficacious in curing the dysentery, I published the receipt in our Edinburgh newspapers, being under no promise of secrecy with regard to this, and being resolved never to make a secret of any medicine whatever.

I do not expect that any physician will incline to give a full dose at first, without better authority than I can give, to strangers; but the cautious may give as small a dose as they please, and make at first trials almost in any disease where purgatives will do no harm, and increase it gradually as they find it operate.

I gave it in dysenteries with or without fever, whether epidemic or not.

I have tried it often, both where bleeding and vomits have been premised, and where they have not, with equal success.

I never choose to give opiates in the beginning, especially where there is great sickness: because, although opium gives great relief to some, yet at other times I have thought both the sickness and purging thereby increased the following day.

I never began with a larger dose than ten grains, because it frequently operates as violently at first, as twenty grains at last, even upon the same patient.

In its operations it sometimes makes the patient sick, and vomits; it purges almost every person, *but I have known it cure without any sensible evacuation or sickness; nay, in violent dysenteries, they purge seldomer with it than without it.*

If it purge sufficiently, or fatigue the patient any way, I intermit a

day or two betwixt each dose, the same way as I do with other purgatives.

As I have cured some with one dose, I have been obliged to give others five or six, especially when the first doses have been too mild; and I have often thought a weak dose did no good in chronic cases.

After the second or third dose, the stools are seldom bloody, the gripes and sickness are much abated, and the mucous stools are less viscid.

I give it with an empty stomach, for then I think it operates most mildly.

I forbid drinking any thing after it for three hours, unless the patient is very sick or disposed to vomit, in which case I give warm water as in other vomits.

I forbid the use of all fermented liquors, and recommend a milk diet, with rice or bread, chicken-broth, or water-gruel.

I give nothing cold, unless it be a tea-spoonful of jelly of hartshorn, as often as the patients please, and sometimes I indulge them with the *jelly of currants*, to refresh their tongue.

A Letter from Dr. Thomas Simpson, Chandos Professor of Medicine in the University of St. Andrew.

DEAR DOCTOR,

I had yours two weeks ago, wherein you desire my observations upon the Stibium Specificum, made public by our friend Dr. Young; but my being much in the country since that time, prevented my writing them out till now.

After relating many cases, the Professor states, You will now see in what different cases I have given this medicine, and how effectually, in all dysenteries of long and short continuance, epidemical and others, as also in the hæmorrhages of the intestines, in which I could not desire more certain proofs of its success than I have had: that there are many cases in both diseases in which it will not succeed, nobody will doubt, considering the different kinds of constitutions we meet with: but that it is a true and successful *specific* in most, is as certain as that the bark cures agues and gangrenes. So that in my order of medicines I have made it the *second*, for its true and observable qualities; for a SPECIFIC

I must term it, since I find that six grains, without purging, or the least disturbance, answers our intentions in most cases. How much the world is indebted to Dr. Young for making it public, every one who has tried it must be forced to confess.

St. Andrew's, Jan. 2, 1738.

A Letter from Mr. John Paisley, Surgeon in Glasgow.

SIR,

Your laudable endeavours to promote the art of medicine, and particularly in recommending the stibium ceratum, not only in fluxes, but in hæmorrhages, which I had an account of a good time ago from my cousin, Dr. Simpson, at St. Andrew's, and from other good hands since, make me hope you will more easily pardon the freedom I take of acquainting you with the success I have had in using it, though I have not the happiness of your acquaintance; and beg the favour, if you can spare so much time, as to let me have an answer to a query or two I subjoin.

When I at first used that medicine, I procured it from Edinburgh, by means of Mr. Stephen, surgeon to General Whetham's regiment, who can vouch for its effects in a great many cases, where he and I attended jointly both some of the town's people and his own men. At first we gave only seven grains in a dose, and to some strong persons increased it by degrees to 13 or 14 grains, and proportionably less to weak and younger patients, made up in a bolus with conserv. rosar. diascord. or theriac Edinens, allowing for drink water-gruel, sometimes with, sometimes without milk; at other times emulsion, tea, or weak broth, and always an opiate after the operation. It sometimes vomited, but purged without griping, or but very gently. When it occasioned vomiting, it made them very sick before the operation, but so soon as it wrought downwards, that went of.

When the parcel I had from Edinburgh was done, I made it by the directions given in the *Edinburgh Courant*, making use of white wax to besmear the ladle, and did not bruise the stibium: after keeping it on the fire the time ordered, I could not rub off any wax: when it was cold, I rubbed it fine in a marble mortar. Of this kind I gave only three grains, and never above five, even to strong persons, and found it

wrought as well as what I had from Edinburgh, and in the same manner, notwithstanding the disproportion in the doses. I did not keep a list of all the patients to whom I gave it, but I am certain I gave it to above *forty, who all recovered.*

As the disease was epidemic, and the patients generally were seized with a fever, at the beginning, in most of them I took away some ounces of blood before using of it, giving it every other day, and in the intermediate days a light cordial; and if there was great pain in the lower belly, or rectum, an emollient clyster, with the yolk of an egg.

Four or five doses perfected the cure for the most part, when taken in time. In others, where it was of long standing, I have been obliged to go the length of twelve or fifteen doses, and never once saw any bad effect from it. I have tried it in diarrhœas, dysenteries, and cholic pains, from viscid sordes in the intestines, and found it in all these cases a safe easy purgative, and sometimes a gentle emetic, and *much surer and a speedier cure than the ordinary methods*, which I used with a great many patients at the same time, &c.

Glasgow, Feb. 6, 1738.

In the West Indies, says Dr. Moseley, in the presence of several of the officers of different regiments, who were desirous to be spectators of a fact so interesting to the army, a soldier has been taken in the worst condition of the disease, with blood running from him, as in an hæmorrhage from a wound, and in the utmost agony; I have given him three grains of the common *glass of antimony*, finely prepared, and made into a small pill: this perhaps has operated upwards and downwards; but in promoting its operation to the skin, those other operations ceased, and a violent sweat has ensued; which was kept up by warm herb teas, and now and then small doses of laudanum, which may always be given with safety, and without any of its usual inconveniencies, while the patient is sweating, which is a fact worthy the attention of practitioners; even the first stool, after the sweating has been raised, has been less bloody, and the third or fourth frequently scarcely tinged. —Such is the power of MEDICINE, properly advised!

DR. CLARK'S PRACTICE.

CALOMEL AND OPIUM.

In the year 1781, the dysentery was introduced into a dock-yard, in this neighbourhood, by some sailors, who returned from abroad ill of the complaint. The disease soon spread amongst the workmen, and several died. I was sent to visit a person who had laboured fourteen days under the disease, and had taken the usual medicines, without ever procuring the least relief, or occasioning one feculent evacuation. In spite of every remedy, he died in a few days. I visited several others, who had been also treated unsuccessfully in the usual manner; and prescribed from five to ten grains of *calomel*, with one or two grains of *opium*, every night at bed-time, with the occasional use of a *saline purgative*. In a few days the bowels were opened, and the most threatening symptoms were soon removed. To those in the chronic stage, small doses of calomel, with opium, were given every night; and sometimes in the morning, with a purge at proper intervals; and *all whom I attended recovered*, except one patient, whose liver was much enlarged, and in a state of suppuration when I first visited him.

In autumn 1783, the dysentery was epidemical in Newcastle and its neighbourhood. I was called to several cases in private practice, which had resisted the common treatment; and attended sixty patients belonging to the dispensary. *Calomel*, in almost every instance in which it was exhibited, soon subdued the disease, or reduced it to the nature of a simple diarrhœa.

In the following autumn the dysentery was again prevalent. The same remedy was tried in obstinate cases, and every patient recovered.

Although in the above instances of epidemic dysentery, the superior efficacy of *calomel* seemed to be established, yet I was still in doubt whether to impute its virtues to its purgative, or to its mercurial quality. But in the autumn of the year 1785, the dysentery again made its appearance, and was attended, in many patients, with so great irritability of the stomach, that the common purgatives were immediately

rejected. To two patients, in this situation, I gave three grains of *calomel*, conjoined with *opium*, every four hours, which in both allayed the vomiting. By an inconsiderable quantity of mercury, the gums became tender: in consequence of which the gripes and tenesmus were instantly relieved; natural evacuations followed, and health was speedily restored, without the assistance of any other medicine.

Being now thoroughly convinced of the advantages resulting from *calomel* as a mercurial, I gave it more freely during the course of the epidemic, and also recommended the practice to all my medical friends in this neighbourhood. All of them have concurred in observing, that they were much more successful than formerly; and that generally as soon as the medicine occasioned the slightest tenderness of the gums, the distemper was either speedily removed, or became extremely tractable.

In prescribing *mercury* in the dysentery, the physician will be at the same loss with respect to the quantity which may be requisite to affect the system, as he is in other complaints. In some patients twelve grains of *calomel*, in divided doses, will bring on slight symptoms of salivation. The majority, however, in this country, will bear from twenty to thirty grains; and, in a few instances, it has been found necessary to persevere in its use, along with purgatives, till one drachm or more has been taken.

The dose of *calomel*, in the early stage of the dysentery, should be always adapted to the violence of the distemper. In the beginning it ought to be given from five to eight grains, with a sufficient quantity of *opium* to procure an alleviation of the gripings; and, after a few nights, the quantity should be diminished. In the acute stage, a saline purge should be occasionally administered, with a view to carry off acrid corrupted humours; and if it operate freely, it will generally afford the greatest relief: but in very obstinate cases, the disease will seldom abate much of its violence, till some degree of tenderness be perceived in the mouth. At the same time, however, care must be taken not to bring on any considerable degree of salivation, which will always prolong the recovery.

In the acute stage of the disease, I have always preferred *calomel* to every other preparation of mercury, on account of its laxative properties: and to render it more certainly so, and likewise to determine it to

the surface, I at first combined it with a small portion of *tartar-emetic**. But in my latter practice, I have generally added no other medicine to it, except opium.

In the chronic stage of the disease, in which the patient is always considerably debilitated, a salivation ought to be carefully avoided. *Calomel* should, therefore, be only given in small doses, as an alterative, conjoined with *opium*. And if it still, with such an addition, prove too laxative, from two to four grains of crude quicksilver, extinguished with mucillage of gum-arabic, ought to be substituted. In this state of the disease, a pill, composed of one grain or two of ipecacuanha, and half a grain of opium, with a sufficient quantity of conserve of roses, should be taken every morning, with the occasional use of rhubarb, demulcents, absorbents, or columbo, as may seem to be indicated.

SIR JOHN PRINGLE'S PRACTICE.

OF ACIDS IN DYSENTERY.

Sir John Pringle, speaking of dysentery, condemns the common practice of giving chalk julep in this disease, as supposing it arose from an acid. I soon, says he, became sensible of its bad effects. *Acids* best suit this disease. These, however, are to be given in so small a quantity as not to be too sharp for the bowels: a practice not only supported by Degnerus†, but by Dolæus, another author of experience, and of such candour, that though he also refers the cause to an acid, yet strongly recommends a mixture of lemon-juice with oil, and says,

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* Antimonium tartarisatum, Ph. Lond.

† Vid. Hist. Dysent. Cap. III. § lxxvii. Hoffman, in these cases, recommends the use of Rhenish wine.

that with that plain medicine he had cured above a hundred *. Agreeable to this method of sheathing the acid, we were told by a commander of the hussars in the German campaign, that when his men were seized with the dysentery, they put cream and vinegar into separate vessels, and with two straws endeavoured to suck up equal portions of each at a time.

J. Heurnius, in a note, de Morb. Intestin. Lib. VI. cap. 10. of Fernelius, says, that garlick, with sugar and lemon-juice, was found to be a remedy, for people who had returned to Amsterdam from the East Indies, afflicted with the dysentery, from living on putrid food in 1597. Ol. Heurnius mentions the same remedy for dysenteries in long voyages.

A most pernicious prejudice, says the amiable Tissot, which still prevails is, that fruits are noxious in dysentery, and even sometimes produce it. This arises from confounding complaints of the bowels. A disorder arising from wind, or the colic, may be aggravated by acids, but the case is different here. The dysentery is contagious, whereas this is not, and it is acids that neutralize the poison productive of so cruel a disorder. In truth, bad fruits, and such as have not ripened well, in unseasonable years, may really occasion colics, a looseness (though oftener a costiveness) and disorders of the nerves, and of the skin; but never can occasion an epidemical dysentery or flux. Ripe fruits, of whatever species, and especially summer fruits, are the real preservatives from this disease. The greatest mischief they can effect, must result from their thinning and washing down the humours, especially the thick glutinous bile, if they are in such a state; good ripe fruits being the true dissolvents of such; by which indeed they may bring on a purging, but such a one as is rather a guard against a dysentery.

We had a great, an extraordinary abundance of fruit in 1759 and 1760, but scarcely any dysenteries. It has been even observed to be more rare, and less dangerous, than formerly; and if the fact is cer-

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* Encyclopæd. Med. Lib. III. Cap. V. Sect. xx.

tain, it cannot be attributed to any thing more probably, than to the very numerous plantations of trees, which have rendered fruit very plenty, cheap, and common. Whenever I have observed dysenteries to prevail, I made it a rule to eat less flesh, and plenty of fruit; have never had the slightest attack of one; and several physicians use the same caution with the same success.

I have seen eleven patients in a dysentery in one house, of whom nine were very tractable; they eat fruit, and recovered. The grandmother and one child, whom she loved more than the rest, were carried off. She managed the child after her own fashion, with burnt wine, oil, and some spices, but no fruit. She conducted herself in the very same manner, and both died.

In a country seat near Berne, in the year 1751, when these fluxes made great havoc, and people were severely warned against the use of fruits, out of eleven persons in the family, ten eat plentifully of prunes, and not one of them was seized with it: the poor coachman alone rigidly observed that abstinence from fruit enjoined by this prejudice, and took a terrible dysentery.

This same distemper had nearly destroyed a Swiss regiment in garrison in the south of France; the captains purchased the whole crop of several acres of vineyard; there they carried the sick soldiers, and gathered the grapes for such as could not bear being carried into the vineyard; those who were well eating nothing else: after this, not one more died, nor were any more even attacked with the dysentery.

A clergyman was seized with a dysentery, which was not in the least mitigated by any medicines he had taken. By mere chance, he saw some red currants; he longed for them, and eat three pounds of them between seven and nine o'clock in the morning; that very day he became better, and was entirely well on the next.

I could greatly enlarge the number of such instances; but these may suffice to convince the most incredulous, whom I thought it might be of some importance to convince. Far from forbidding good fruit, when dysenteries rage, the patients should be encouraged to eat them freely; and the directors of the police, instead of prohibiting them, ought to see the markets well provided with them. It is a fact of which persons, who have carefully informed themselves, do not in the

least doubt. Experience demonstrates it, and it is founded in reason, as good fruit counter-operates all the causes of dysenteries.

The experience of all countries and times so strongly confirms these important truths, that they cannot be too often repeated, too generally published, whenever and wherever this disease rages. The succession of cold showers to violent heats; a too moist constitution of the air; an excess of animal food; uncleanliness and *contagion* re the real causes of epidemical fluxes.

DR. THORNTON'S PRACTICE.

I usually give an opiate of 20 drops of laudanum in some peppermint-water, and in twenty minutes after, a purge of castor oil, made into a kind of soap.

R. Ol. Ricini, unc. ss.
Kali ppti, scr. 1.
Confect. Amygdal. scr. 2.
Bene terantur. Adde gradatim,
Aq. Cinnam. unc. 1.
Ft. Haust. aperiens.

After this, I order—

R. Rhei pulv. gr. 2.
Colomb. pulv.
Pulv. Tragacanth. c. āā scr. 1.
Ft. Chart.

To be taken every three hours.

A practice which I have often found equally successful in *dysentery* as in *diarrhœa*.

Should this plan fail, I have recourse to the other means before related.

HOOPING-COUGH.

PERTUSSIS.

SYMPTOMS DENOTING LITTLE OR NO DANGER.

When the *hooping-cough* is fully formed, if the fits are neither frequent nor violent, with moderate expectoration, and the patient, during the intervals of the fits, is easy, keeps his appetite, gets sleep, and is without *fever* or *difficult breathing*, the disease is attended with *no danger*; and these circumstances becoming daily more favourable, the disease soon spontaneously terminates.

Those cases in which the fits terminate by *a vomiting* *, and are immediately followed by a craving of food, are generally *without danger*.

A moderate *hæmorrhagy* from *the nose* often proves *salutary* †, but very large hæmorrhagies are generally very hurtful.

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* This circumstance discriminates this disease from a catarrh, and early indicates the true hooping-cough.

† This deserves to be very generally known.

This disease coming upon persons under a state of much debility has often an unhappy event, also when attacking *infants**.

OF THE CURE.

The *cure* of this disease has been always considered as difficult, whether the purpose be to *obviate* its *fatal tendency* when it is *violent*, or merely to *shorten* the *course of it* when it is *mild*. When the *contagion is recent*, and continues to act, we neither know how *to correct*, nor how to *expel it*; and therefore the disease necessarily continues for some time: but it is probable, that the contagion in this, as in other instances, ceases at length to act; and that then the disease continues, as in other convulsive affections, by the power of *habit* alone.

TWO STAGES OF THE DISEASE.

From this view of the matter, I maintain, that the practice must be different, and adapted to *two different indications* according *to the period of the disease*. At the *beginning* of the

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* When this disease is in a neighbourhood, mothers with infants at their breasts should carefully avoid the contagion. Should any suspicious cough arise, having a remarkable *hollowness*, and coming on without any apparent cause, and without any sneezing or coryza, attack any child, a removal is necessary for the younger children, who usually escape, and after three weeks, I have seen the hooping-cough absentees return, without communicating the infection. But the rule may not be general.

disease, and for some time after, the remedies to be employed must be such as may obviate the violent effects of the disease, and the fatal tendency of it; but, *after the disease has continued for some time*, and is without any violent symptoms, the only remedies which can be required are those which may interrupt its course, and put an entire stop to it sooner than it would have spontaneously ceased.

BLEEDING.

For answering the *first indication.* In plethoric subjects, or in others, when from the circumstances of the cough and fits it appears that the blood is difficultly transmitted through the lungs, *blood-letting* is a necessary remedy; and it may be even necessary to repeat it, especially in the beginning of the disease: but, as *spasmodic affections* do not commonly admit of *much bleeding*, so it is seldom proper in the chin-cough to repeat this remedy often *.

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* Bleeding is very seldom required, and has sometimes rendered this disease fatal by debilitating the general habit. A *calomel* purge has usually in children sufficiently reduced the *inflammatory* diathesis, with abstinence from animal food, and a *vomit* will accomplish more here than all the repeated bleedings, followed by a saline purge.

R. Magnes. Vitriolat. dr. 4.
Infus. Rosæ, unc. 7.
Ft. Mist.

Cap. coch. larg. 1. 3tiâ quâque horâ donec alvus sit valde soluta.

All medicines for children should be previously sweetened with sugar.

OPENING THE BODY.

As costiveness frequently attends this disease, so it is necessary to obviate or remove it by *laxatives* * employed, and keeping an open belly is generally useful: but large evacuations in this way are commonly hurtful.

BLISTERING.

To obviate or remove the inflammatory determination to the lungs that sometimes occurs in this disease, *blistering* †

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* In all cases, this is required, and is best done by a little *manna* for infants, and I have found *lenitive electuary*, with ten grains of *vitriolated magnesia*, very excellent for children, given every second or third morning. Four grains of rhubarb to ten of vitriolated kali, well sweetened, has also been an useful aperient, every other morning, at the onset of the disease. With some children, I have been obliged to conceal these remedies in apples, stewed with sugar, which has completely disguised most medicines for children. Where this cannot be accomplished, calomel must be then given, and purged off with weak senna tea, mixed with other tea, sugared, and with milk in it.

† Blisters always create great anguish in children, who do not understand the cause of suffering: it irritates both skin and temper, and increases for a time the existing fever: the *itching* next becomes intolerable, and in many cases an incurable mortification ensues. I have found that *rubefacients* answer all the purposes intended by blisters, and prefer, therefore, with them, except in most urgent cases, the following liniment, to be repeated every four hours, flannel being put over the part.

R. Lin. Sapon c, unc. 1 ss.
Tinct. Cantharid. dr. 4.
Ft. Lin. 4tis horis utendum.

is often useful, and even repeated blistering has been of service; but issues have not so much effect, and should by no means supersede the repeated blistering that may be indicated. When blisters are proper, they are more effectual when applied to the thorax, than when applied to any distant parts.

EMETICS STRONGLY RECOMMENDED.

Of all other remedies, *emetics* are the most useful in this disease; both in general by interrupting the return of spasmodic affections, and in particular by determining very powerfully to the surface of the body, and thereby taking off determinations to the lungs. For these purposes, I think *full vomiting** is *frequently* to *be employed*; and in the intervals necessary to be left between the times of full vomiting, *nauseating doses* of the antimonial emetics may be useful †.

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* This is best done by a teaspoonful of *antimonial wine*, repeated every five minutes until it operates: 20 drops for an infant.

† Much injury is sometimes sustained by violent straining to cough, and fruitless efforts to expectorate; for such it is advantageous to administer small doses of ipecacuanha or antimonial wine. The former of these medicines is by us preferred, by giving, every four or five hours, 20 or 30 drops, and soon after some warm diluent, as barley-water or sage, or balm tea, sweetened. This plan of cure was introduced first by Dr. Armstrong, the poet, and merits the warmest approbation. Some have added to this the same quantity of tincture of squills, or a teaspoonful of vinegar of squills, with considerable advantage, to assist in dislodging the phlegm.

SECOND STAGE.

These are the remedies to be employed in the *first stage* of the disease, for obviating its fatal tendency, and putting it into a *safe train.* But in the *second stage*, when I suppose the contagion has ceased to act, and that the disease continues merely by the power of *habit*, a different indication arises, and different remedies are to be employed.

CONTINUED FROM HABIT.

This disease, which often continues for a long time, does *not*, in my opinion, continue during the whole of that time, in consequence of the contagion's remaining in the body, and continuing to act in it. That the disease does often continue long after the contagion has ceased to act, and that too by the power of *habit* alone, appears to me probable from hence, that *terror* has frequently cured the disease; that any considerable change in the state of the system, such as the coming on of the *small-pox*, has also cured it; and, lastly, that it has been cured by antispasmodic and tonic medicines; whilst none of all these means of cure can be supposed either to correct or to expel a morbific matter, though they are evidently suited to change the state and habits of the *nervous system.*

TERROR.

Terror may possibly be a powerful remedy, but it is difficult to measure the degree of it that shall be produced; and,

as a slight degree of it may be ineffectual, and a high degree of it dangerous, I cannot propose to employ it.

ANTISPASMODICS AND TONICS.

The other remedies which we suppose suited to our second indication, and which indeed have been frequently employed in this disease, are *antispasmodics* or *tonics*.

CASTOR.

Of the antispasmodics, *castor* has been particularly recommended by Dr. MORRIS; but in *many trials* we have not found it *effectual*.

MUSK.

With more probability *musk* has been employed: but whether it be from our not having it of a genuine kind, or not employing it in sufficiently large doses, I cannot determine; but we have not found it *commonly successful**.

OPIUM.

Of antispasmodics, the most certainly powerful is *opium*†;

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* *Musk* and *castor* are very heating remedies, and cannot be given to children without great risk of inducing an inflammatory disease.

† This remedy should be also very sparingly employed, as heating too much the constitution of children. The sleep induced is a kind of drunken fit, and the bowels are confined by it. Where great restlessness and want of sleep exist, a teaspoonful of *syrup of poppies* has,

and when there is no considerable fever or difficulty of breathing present, opium has often proved useful in *moderating* the *violence* of the *chincough*; but I have not known it employed *so as entirely to cure the disease.*

HEMLOCK.

If *hemlock* has proved a remedy in this disease, as we must believe from Dr. BUTTER'S * accounts, I agree with that author, that it is to be considered as an antispasmodic. Upon this supposition, it is a probable remedy, and from the accounts of Dr. Butter, and some others, it seems to have been often useful: but, in our trials, it has *often disappointed us*, perhaps from the preparation of it not having been always proper †.

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however, done good. Quack medicines abound with this noxious drug for children, and thousands of these innocents, without power of choice or resistance, are annually destroyed by these *legal* murderers of the human race, and too many nurses are in the habit of this abuse of medicine. All drugs proposed for *children* should have first the sanction of some learned body, to ascertain whether they contain *poison* or not.

* Vide page 254, where this practice is particularly considered. We would still, however, caution against a too earnest desire to make a cure of this disease by means of poisons, lest the *remedy* should be found *more dangerous* than the disease. Out of 26 cases related by the Doctor, two died, which is a larger proportion of mortality than usually accompanies this disease.

† *Hemlock* loses most of its virtues by keeping; hence patients have taken large doses without effect, when a new quantity (being recent) has produced, in half the dose, most alarming symptoms. Vide a particular case of that kind of a lady in CULLEN'S *Materia Medica*.

BARK.

Of the tonics, I consider the *cupmoss*, formerly celebrated, as of this kind; as also the bark of the *misletce:* but I have had no experience of either, as I have always trusted to the *Peruvian bark.* I consider the use of this medicine as the most certain means of curing the disease in its *second stage;* and when there has been little fever present, and a sufficient quantity of the bark has been given, it *has seldom failed of soon putting an end to the disease* *.

CHANGE OF AIR.

When convulsive disorders may be supposed to continue by the force of habit alone, it has been found that a considerable change in the whole of the circumstances and manner of life has proved a cure of such diseases; and analogy has applied this in the case of the chincough so far, that *a change of air* has been *employed,* and *supposed* to be *useful.* In *several instances I have observed it to be so;* but I have *never found the effects of it durable, or sufficient to put an entire stop to the disease* †.

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* Children best take the bark in milk, or in strong liquorice tea, not less than a scruple should be given four times a day.

† In the *Encyclopædia Britannica,* article *Medicine,* the writer says, "*The remedy most to be depended upon in this disease is change of air.*" This is consonant with my own experience, and the *hooping-cough* has from this, in most cases, been instantaneously relieved, sometimes as quickly cured. The *change of objects* operates strongly upon

young minds, who see in every *new* situation, a *new world*, and no one can doubt the power of *mental stimulus* in *spasmodic diseases*. In *hysteria* we also observe the power of the fanning *breeze*, patients being drawn out into the *open air* for recovery. The effect of *changes of air* upon children is astonishing in many other disorders, and *few die* of *this disease*, except in *cities*. The air to be preferred should be moist, near some river, or pond, the better, and the patient should be exposed to it early in the morning, to get rid of the accumulated phlegm. When the paroxysms return with the same violence as at first, a fresh change should be again pursued, three weeks being considered as a sufficient time for remaining in one spot. As a strong argument in favour of *change of air*, all medical men in London send out of town their children, when labouring under the *hooping-cough*, and experience confirms the propriety, notwithstanding the opinion of doubt delivered on this subject by this celebrated professor. A purge once or twice a week should be given at the same time.

CHEMICAL NATURE OF THE ATMOSPHERE.

Modern philosophy has discovered, that the air we breathe consists of 27 parts *oxygene* and 73 of *azot*, in every hundred parts, and that a large proportion of this *oxygene* is condensed by the blood in the lungs, which stimulates the heart and arteries, producing the circulation, and that more *oxygenated* blood is hence thrown to every part of the system. The vigour of the frame becomes thereby increased, and *spasm* lessened, or altogether cured. Hence the benefit of pure country air in this disease.

DISCOVERIES

AT AND SINCE THE

TIME OF DR. CULLEN.

DOCTOR BUTTER'S PRACTICE.

HEMLOCK.

This physician originally came from Scotland to London, in order, as he said, to get *bread*. A wag answered, yes, and to get *butter* to your *bread*. Dr. Butter became eminent by his first using *hemlock* in this disease, gives us an account of the several cases said to be cured by *hemlock* in powder. He directs *half a grain* a day for a child under six months old; *one grain* for a child from six months to two years; afterwards allowing *half a grain* for *every year* of the *patient's age* until he be 20: beyond that period, he directs ten grains to be given for the first day's consumption, gradually increasing the dose according to the effect. If the patient have not two stools a day, he advises *magnesia* or any *neutral salt*, to be added to the *hemlock mixture*. By this method, he says, the peculiar symptoms of the disease are removed, in the space of *a week*; nothing but a slight cough remaining.

MR. SYER'S PRACTICE.

CALOMEL AND HEMLOCK.

Recourse has often been had to volatile embrocations, and different

antispasmodic remedies, but I have never seen them the least instrumental in curing, or even moderating the complaint. I think it necessary, however, to state from experience, that a combination of *calomel* with the *inspissated juice of hemlock*, seems to lessen the violence of the paroxysms, and if *cautiously* persevered in, to mitigate many of the urgent symptoms of the disease. An infant of the sixth or eighth month should commence with *half a grain* of the *soft extract* of *hemlock*, and a *quarter of a grain* of *calomel*, which may be exhibited several times a day, in *severe cases*, for three days in succession, gradually increasing the dose of the *extract of hemlock* to *a grain and a half*, or *two grains*, twice a day, with the same or a larger dose of *calomel*, if necessary, taking every precaution not to affect the gums, by attending to keeping the bowels open. Where the child has attained the *second* or *third* year, it may be advisable to begin with *half a grain* of *calomel*, and an equal quantity of extract of *hemlock*, and to exhibit it at the same intervals as in the former period; the *extract* here may be increased with advantage after the first week or ten days, but it will scarcely be necessary to alter the dose of the *mercurial**.

DOCTOR FERRIAR'S PRACTICE.

ARSENIC.

Several practitioners of eminence have ascribed considerable virtues to small doses of *arsenic*, for the cure of this disease; amongst these

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* I would wish here to inculcate *this caution*, that no *hemlock* is required, except in very *bad cases* of *this disease*. In most *nothing* is *required*, in others only *slight remedies*, and *poisons* in a very few. The danger of *doing too much*, of being *too officious*, can never be too often inculcated in *youthful minds*, especially as respects *children*, whose constitutions are very easily undermined by *poisons*. The same applies to *arsenic*, where the *remedy* is *more dangerous* than *the disease*.—Vide next practice.

Dr. Ferriar, and Mr. Simmons, of Manchester, relate that they have administered *Fowler's Solution* with considerable advantage. The first dose is one or two drops twice a day, then three or four to a child of six or seven years, of a day, increasing the dose to nine or ten drops three times a day. Then omitting the medicine for two or three days, giving in this interval some gentle opening medicine. In some of these cases, venesection and emetics were employed, and they talk of a complete cure being always accomplished in a fortnight. Having omitted the solution for a fortnight, it must be repeated, in order to prevent a relapse.

DOCTOR PEARSON'S PRACTICE.

OPIUM, IPECACUANHA, AND CARBONATE OF SODA.

After having dislodged the phlegm by an emetic, this eminent physician recommends these ingredients, viz.

R. Tinct. Opii, gtt. 1.
Vin. Ipecacuan. gtt. 5.
Sodæ Carbonat. gr. 2.
Syr. Violæ, dr. 2.
Aq. Rosæ, dr. 4.
Ft. Haust. 4tâ quâque horâ sumend.

This is continued several days, and to prevent costiveness, an occasional purge of calomel and rhubarb is enjoined. This is given to a child betwixt one and two years of age, and in half the proportion for an infant, increasing the dose, but in the same proportion for children beyond this age.

A POPULAR REMEDY.

CARBONATE OF SODA AND COCHINEAL.

In the newspapers were seen strong encomiums on the *Fixed Alkali*, or *Salt of Tartar*, three grains of this, to two of *Cochineal*, three

or four times a day. This I have seen frequently do much good. The quantity should be diminished for infants about one half.

AN EMBROCATION.

R. Antim. tart. scr. 1.
Tinct. Lyttæ, dr. 4.
Aq. Puræ, unc. 2.
Ft. Embrocatio.

A teaspoonful may occasionally be rubbed on the chest. This is *Roache's embrocation.*

A LINCTUS.

R. Cons. Rosæ
—— Cynosbat āā unc. 1.
Syr. Mori
—— Altheæ āā dr. 1.
Tinct. Scillæ, gtt. 10.
Ft. Linct.

A little of this linctus may be occasionally used, also honey, if the child will take it.

A MIXTURE.

R. Syr. Mori, unc. 1 ss.
Suc. limon recent, dr. 4.
Ft. Mist.

The phlegm may be also cut by taking the above mixture.

I could add the practice of giving sugar of lead (Plumbum-super-acetat.) tinct. cantharid. and tinct. camphoræ composit. given till it induces strangury, the oil of amber (oleum succini) artificial musk, digitalis, hyosciamus, belladonna, and some other powerful narcotic poisons; but their employment I think too dangerous to be generally

recommended by us, who think this disease is *seldom fatal*, but by the *rash attempts* of those, who are unwilling to leave any thing to Nature, but must prevail through art alone.

DOCTOR THORNTON'S INTRODUCTION OF VITAL AIR.

Seeing how beneficial *change of air* was in this disease, I was naturally induced, after the employment of a mild *vomit* and *purge*, to get a few patients to inhale a quart of *oxygene air*, mixed with six of atmospheric, and this more especially where there appeared any obstruction in passing blood through the lungs. In the first cure, now twenty years ago, that of Master TOVEY, it produced a most salutary effect, and in a few others; but, from the difficulty of getting young people readily to inhale this factitious gas, many trials have not been made, and this disorder goes away often of itself, without any very apparent cause, therefore a few trials can create no very decisive induction on this head.

CAUTION.

Children labouring under this disease, should sleep with their heads elevated, and be assisted by the arm, or by laying hold of something to aid them in getting rid of the accumulated secretion, which is induced by this extraordinary disease, which can only appear once in a person's life; and which, when seemingly cured, will sometimes return, upon any slight cold, which demands the same methods of cure as before employed.

CANINE MADNESS,

OR

HYDROPHOBIA.

The discriminating symptom of this disease is a strong dread of water, and incapacity of swallowing any liquid without strangulation, from spasms of the muscles of the throat.

MOST REMEDIES EXTREMELY DOUBTFUL.

From the *most ancient* to the *present* times, *many remedies* for *preventing* and *curing this disease* have been *recommended* under the sanction of *pretended experience*, and have perhaps also kept their credit for some time *: but succeeding times

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* This has originated from the numbers who have escaped infection, who have been bitten. In general, the clothes have intercepted the poison: in others, the poison has been eradicated. In all cases, repeated *washings* should be employed. I would recommend first *soap and water*, the colder the water the better, as heat produces absorption. After this, the wound should be covered with *salt*, and this also *washed out*, every half hour. By this practice, I have prevented the hydrophobia in several cases, and think in *all*, or *most cases*, this poison might be removed, even without the *knife*, or *caustic*; but where I could, I would do all things to make security doubly secure. Some persons have had the heroism of sucking out the poison from the wounds of children, and with constant success.

have generally, upon the same ground of experience, destroyed that credit entirely; and most of the remedies *formerly employed* are now fallen into absolute neglect. In the *present age*, some *new remedies* have been proposed, and have experience alleged to vouch for their efficacy; but *many doubts* still remain with respect to this: and though I cannot determine in this matter from my own experience, I think it incumbent on me to give the best judgment I can form with respect to the choice of the remedies at present recommended *.

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* Dr. Boerhaave has given a pretty full catalogue of those specifics from the days of Galen to his own time; and concludes, that no dependence is to be put in any of them. It is now, therefore, altogether unnecessary to take notice of burnt crabs, the hyæna's skin, mithridate with tin, liver of the rabid animal, or a variety of other pretended remedies for this disease, proved by experience to be totally inefficacious. But although no greater confidence is perhaps to be put on specifics of modern date, it will be proper that these should be mentioned.

Bathing in cold water, especially in the sea, and drinking sea-water for a certain time, have been prescribed, and by some accounted a certain preventive. When this was known to fail, a long course of antiphlogistic regimen, violent submersion in water, even to danger of drowning, and keeping the wounded place open with cauteries, were recommended.—To this extreme severity Dr. Mead objected; and in his treatise on this subject endeavours to show, that in all ages the greatest success has been reaped from stimulants, for which reason, he proposes the following powder: "Take ash-coloured ground liverwort, half an ounce; black pepper, two drachms: reduce them separately to powder, then mix them together." This powder was first published in the Philosophical Transactions, by Mr. Dampier, in whose family it had been kept as a secret for many years. But this medicine, which was inserted in former editions of the London and Edinburgh Pharmacopœias, under the name of *Pulvis Antilyssus*, has long lost its credit.

EXTIRPATION WITH A KNIFE OR CAUSTIC ADVISED.

I am, in the first place, firmly persuaded, that the most certain means of preventing the consequences of the bite is,

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There is a famous East-India medicine, composed of 24 grains of native and as much factitious cinnabar, made into a powder with 16 grains of musk. This is called the Tonquin medicine, and must be taken into a teacup-ful of arrac or brandy; and is said to secure the patient for thirty days, at the expiration of which it is to be repeated: but if he has any symptoms of the disease, it is to be repeated in three hours, which is said to be sufficient for a cure. The first dose is to be taken as soon after the bite as possible.

Another celebrated remedy is PALMARIUS's *powder*, composed of the leaves of rue, vervain, sage, polypody, wormwood, mint, mugwort, balm, betony, St. John's-wort, and lesser centaury. These herbs must be gathered in their prime, dried separately in the shade, and then powdered. The dose is a drachm, or a drachm and an half, taken every day.

Another celebrated antidote against the poison of a mad dog hath been known for some years by the name of the *Ormskirk medicine*. The true composition of this is kept a secret by the proprietors: however, it has been analyzed, and the following composition published by Dr. Heysham, as perfectly similar to it in all respects.

"Take half an ounce of chalk, three drachms of Armenian bole, ten grains of alum, one drachm of elecampane in powder; mix them all together, and add six drops of oil of anise."

They must certainly be very credulous who can put confidence in such an insignificant medicine as a preservative against the hydrophobia.

Many instances might be adduced of the inefficacy of this pretended specific; the danger of acquiescing in which, will, it is hoped, create a due degree of caution in those to whom they who are so unfortunate as to be bit by a mad animal may commit themselves.

to *cut out*, or *otherwise destroy* *, the part in which the bite has been made. In this every body agrees; but with this

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Another remedy may also be mentioned as having had the reputation of being sometimes successful in this disease; which is chiefly employed in different parts of India, particularly in the territory of Tanjore. The medicine to which we now allude contains indeed several articles which are altogether unknown in our materia medica: but it contains at least one very powerful substance well known to us, viz. arsenic. This medicine, known by the name of the Snake Pills, as being principally employed against the bite of the most venomous snakes, is directed to be prepared in the following manner:

Take white arsenic, of the roots of nelli navi, of nevi visham, of the kernels of the ner valum, of pepper, of quicksilver, each an equal quantity. The quicksilver is to be rubbed with the juice of the wild cotton till the globules are perfectly extinguished. The arsenic being first levigated, the other ingredients, reduced to a powder, are then to be added, and the whole beat together with the juice of the wild cotton to a consistence fit to be divided into pills.

Though these pills are principally used against the bite of the cobra de capello, yet they are said also to be successful in the cure of other venomous bites; and, for the prevention of rabies canina, one is taken every morning, for some length of time. Of this remedy European practitioners have, we believe, as yet no experience; and if, in the accounts transmitted by East India practitioners, it cannot be said that we have authentic evidence of its want of success, it can as little be pretended that there is indubitable evidence of its efficacy in any instance; and it is by no means improbable that it will be found equally inefficacious with others at one time considered as infallible.

* The sooner this is done the better, and the *knife* should be employed, as more certain, where this can be done with safety; but where that is not the case, the *Lunar caustic* should be abundantly used. I have known a number of cases at Guy's Hospital, where this has been done, also in private practice, and no injury has afterwards arisen to the parties. If a rabbit be bitten with a viper, it dies in two minute:

difference, that some are of opinion that *it can only be effectual when it is done very soon after the wound has been made*, and they therefore neglect it when this opportunity is missed. There have been, however, no experiments made proper to determine this matter; and there are many considerations which lead me to think that the poison is not immediately communicated to the system; and, therefore, that this measure of destroying the part may be practised with advantage, even *many days after* * the bite has been given.

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but if the bitten part be touched with *lunar caustic*, the animal lives; and what is very extraordinary, if the same be taken inwardly, an equal good result arises. There may be then some specific virtue in the *lunar caustic* (ARGENTUM NITRATUM), from the superabundant *oxygene*, which appears to be a general antidote to all *vegetable* and *animal* POISONS. Some have employed a *hot iron*, searing the part; others again, *gunpowder*, which being lighted, penetrates deepest. Dr. Thomas, in his admirable work, the Modern Practice of Physic, so often recommended by us, advises us to extirpate the wounded part, then apply a cupping-glass with scarifications to it, so as to make it bleed freely, and afterwards dress it with some irritating ointment, such as the unguentum lyttæ, that the wound may be kept discharging for a considerable length of time. Many persons who have been treated in this manner, have been known to escape the disease; while others, who have neglected these means, and who were bitten by the same animal, have become affected.

* Where delay has arisen from ignorance or disbelief of the dog being mad, much alarm must necessarily be excited; but let it be remembered, that a blister does not act at once, that the small-pox, and other inoculated disorders, are at first *local*, and many days after have been extirpated. So here the wound should be treated with *lunar caustic*, although a dangerous delay has occurred, and the unfortunate individual may be thereby rendered safe.

MERCURY RECOMMENDED AS A PREVENTIVE AND CURE.

Whilst the state of our experience with respect to several remedies now in use, is uncertain, I cannot venture to assert that any of these is absolutely ineffectual; but I can give it as my opinion, that the efficacy of *mercury* *, given very largely, and persisted in for a long time, both as a means of *preventing* the disease, and of *curing* it when it has actually come on, is better supported by experience than that of any other remedy now proposed or commonly employed.

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* In some late cases at Chelsea, where the whole family of a Mr. Baker was bit by a small dog, evidently mad, Dr. MOSELEY judiciously employed *mercury* to the *wounds*, and also *kept the constitution* in a constant state of excitement, the mouth being severely affected in all, six in number, and here *no hydrophobia* ensued: but in some other cases there, this disease took place, and *bleeding* being copiously employed, the patients died. *Vide* CASES OF HYDROPHOBIA BY DR. MOSELEY.

With the design of exciting a *rapid salivation* in *hydrophobia*, Dr. DARWIN has suggested that the *hydrargyri oxymurias* may be given frequently to the patient with a prospect of advantage. From a paper by Mr. ADDINGTON, it appears that a similar mode is adopted by him for the cure of *gonorrhœa virulenta*, and that he has cured hundreds in a very short time, in this manner, without the *least disagreeable consequence*. He directs us to proceed as follows: "Three grains of *hydrargyri oxymurias* are to be dissolved in one ounce of rectified spirit. Half of this mixture is to be taken undiluted at going to bed: it produces a *copious salivation* for an hour and a half, or longer, during which the patient spits about a quart." *Vide* Dr. THOMAS'S *Modern Practice of Physic*.

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN.

SALTED HERRINGS.

BOERRHAAVE mentions that an old Batavian physician applied salted herrings to the wound, for twenty-four hours, and by this means *hydrophobia* has been prevented. He adds, that he did not know how these produced the effect, but that they had a *specific* virtue. It must, however, arise from the *salt-petre* employed; for where gunpowder is fabricated, dogs, which are bitten, are brought to be dipped in the refuse water from all parts, at one shilling each, who are supposed to be thereby secure. Will the application of *salt-petre* prevent the *hydrophobia?*

OIL.

Poisons may act by *spiculæ*, and these may be *blunted* by the round particles of which *oil* is composed. The viper-catchers, when bitten, employ simply *oil*, and the plague is well known to be resisted by vendors of *oil*, and by persons, who shall be smeared with it. It is even said to cure the plague itself. A case has lately occurred (vide London Practice of Physic, p. 296) where the greatest benefit was derived, says the author, from the application of *oil* thrown into the habit, by every means, by the mouth, by the anus, in form of a glyster, and by general frictions repeatedly employed. The dread of fluids is said to be diminished in proportion to the quantity of oil which is swallowed.

A Dutch physician communicated to the Medical Society of Amsterdam, in 1781, a full account of persons cured of *hydrophobia* by eating of eggs fried in oil; the same also was applied outwardly to the wound. Seeing that the albumen of eggs is the best corrective of corrosive sublimate, we must not so much smile at this curious combination. The *oil-bath* is also mentioned by old Celsus. It cures the bite of the rattlesnake. If *olive-oil*, says Miller, be taken in the quantity of a few spoonsful, and also be applied to the bitten part, it has proved adequate to the worst cases, if timely exhibited *.

ARSENIC.

Doctor Linhe, of Jena, made many experiments with a strong solution of *white arsenic* applied to wounds infected with the saliva of rabid animals, and with invariable success. Dr. Hamilton, in his Treatise on Hydrophobia, strongly advises the same trial to be made on man.

DR. THOMAS'S JUDICIOUS SUGGESTION.

VOLATILE ALKALI.

In his excellent chapter on animal poisons, this judicious physician says, "When a person has been wounded by a venomous snake, the first step to be adopted is, to pass a tight ligature above the injured part (where capable of such an application), so as to prevent the further absorption of the virus into the system, and then to evacuate that which has already been admitted by sucking the wound, as practised by the *Creek Indians* with impunity, and by afterwards promoting discharges of blood and serum from it by means of scarifications, cupping, excision, or the application of caustic.

Soap-lees, *volatile alkali*, and the *spiritus ammoniæ succinatus*, and *eau de luce*, have all been found excellent applications to *wounds* inflicted by the rattle and other venomous snakes, provided they have

* Vide Thomas's Practice of Physic, p. 676.

been used immediately after the accident. The last remedy is likewise used *internally* in the East Indies, in the proportion of a tea-spoonful to a wine-glassful of water, and by being repeated a few times, is said to be attended with a happy effect. The fresh juice of the rattlesnake plaintain applied to a wound of this nature, is said to be a powerful antidote against the poison of this reptile. We are told by Captain Carver, in his Travels through North America, that so convinced are the Indians of the power of this antidote, that for a trifling bribe of spirituous liquor they will at any time permit a rattlesnake to drive his fangs into their flesh. He likewise speaks of *salt* and pulp of lemon, as an effectual remedy against the bite of this reptile, provided it is applied immediately to the wound in a strong solution.

"When through neglect the venom has been absorbed, all that can be done is to excite a strong perspiration, by means of emetics and powerful *sudorifics*. This, we are informed by Dr. Barton, is effected in a violent degree by the juice of the *garden-rue*, which the Indians in Jersey give in the dose of two table-spoonsful every two hours*.

"Under the head of Animal Poisons it is mentioned that the external application, as well as the internal exhibition of the *liquor ammoniæ*, was found, on many trials, entirely to do away the injurious consequences arising from the bite of the cobra de capello, a snake of the most venomous kind, and productive of symptoms pretty similar to those arising from a rabid animal. The same remedy would therefore seem worthy of a trial in cases of *hydrophobia*; but as there would be great difficulty in administering caustic *volatile alkali* in a state necessarily diluted with some mild bland liquor where the increased sensibility of the fauces and the dread of liquids are so strongly felt, we might convey it into the stomach in the manner practised by Mr. John Hunter, and hereinafter mentioned, or we might mix the *volatile alkali* with crumbs of bread, and form the mass into pills, or a bolus."

AN IMPERFECT TRIAL OF VITAL AIR.

Of all the calamities incident to the human race, that of *hydrophobia* is the most dreadful! John Kiff, æt. 30, a very industrious, sober, and

* Might not this be employed in Hydrophobia?

honest jobbing gardener, at Kilburne, who lived next the Bell, on Monday, May 8, when at work in his garden, was attacked by a large Newfoundland dog, labouring under canine madness, his tongue lolling out of his mouth, the whole extent; when he seized him by the calf of his leg, and the furious animal tore it, casting the flesh a great height in the air; and he even followed him to a pond (mad dogs have no dread of water), into which the man leaped, and fought with the dog, finding a log of wood in the water. He had already the day before bit a man and boy, and several dogs, and the horses of Mr. Lovelock at the Wells, one of which, four weeks after, went mad, and was obliged to be shot. To the leg of Mr. Kiff was applied the *Ormskirk* medicine, which was also taken internally. The leg healed most kindly, and Mr. Kiff was lulled into the hope of safety, and that he would be spared to his wife, whom he tenderly loved, and infant family, but mysterious are the ways of Heaven—when not apprehending any danger, on Tuesday, June 13, 1815, he was seized with pains across his back, which he apprehended to be rheumatism, great pain along the bitten limb; and when attempting to swallow, found himself, as he expressed it, incapable. An inexpressible dread of any liquid came on—the attempt to swallow was to him as dreadful as the act itself, and even the pouring out any liquid was able to excite the same sense of suffocation. He now became convinced he had *hydrophobia* on him.

He was frequently seized with most violent agitations, the sweat poured off his face incessantly; he could obtain no sleep; and on the next morning (Wednesday) at 12, Dr. Thornton, of Broad Street, was sent for. Knowing the disease, he had not the least doubt of this being *hydrophobia*, and he poured water into a basin before him, when the poor sufferer was thrown into convulsive starts, similar to persons who are going to jump into cold water; and the swallowing of any liquid was obliged to be accomplished with a great convulsive effort, denoting the utmost terror of suffocation. This symptom, it may be necessary to mention, is one of the most striking characters of this dreadful disease, and arises from spasms of the muscles of the throat, which send the liquid upwards into the nose, or windpipe, which produces always a sense of suffocation: yet he was able to eat, with some facility, bread and butter, and expressed himself as being hungry; but here the crumbs were thrown into the upper part of the throat, and were troublesome. The whole frame being in the highest state of nervous irritability, the

opening the window and letting in a cold current of air, or even a fly settling on his face, produced the same spasmodic attacks.

Although there were frequent eructations of wind, there were no symptoms of hysteric affection, and the diaphragm gave occasional convulsive leaps, the stomach was disordered, and the eyes seemed to glare, and the perspiration fell frequently in drops from his head, and produced the like sensation of suffocation. The pulse was small and rapid. He took *Lunar Caustic* (a certain cure for the bite of the viper, either applied outwardly, or taken inwardly) the *marine acid* (a remedy used in sore throats) diluted in water, and inhaled 12 quarts of *vital air* *, when the distress at swallowing became greatly abated, and enjoying the powers of his mind, he had much hope of recovery. The disorder, although not removed, was evidently much diminished; but he passed again on Wednesday a sleepless night; yet on Thursday, at eleven o'clock, he sent for Mrs. Batty, a neighbour, and desired her to bring her daughters to him, saying, they were much alarmed yesterday; let them come now, and see how well I am; Doctor Thornton has saved my life, and I sha'n't die. But at twelve, two very eminent practitioners, who were from curiosity present, thought that he *ought to be bled*, and they took from him 40 ounces of blood †, and the bandage

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* Doctor Hamilton, who published two volumes on Hydrophobia, recommends the trial of Vital Air, as the *only probable remedy*.

† This horrid practice of bleeding profusely in a disease evidently nervous, arose from a priest of the name of Timon, in India, who said he recovered a man in this disease by nearly bleeding him to death. But this man, a farrier, was almost a giant, and would swallow two bottles of brandy at a toss, without much intoxication. He died, however, a month after. Out of many cases, I shall only select the following from Dr. Hamilton's work on Hydrophobia:

In the beginning of December 1728, a young gentleman, aged 17, was bit by a dog in the middle-finger of the right-hand, about the middle of the nail. In the beginning of January 1729, he complained of pain in that finger reaching along the back of the hand to the elbow. In the night between the sixth and seventh days of that month, he became hot and restless: emollient and anodyne fomentations were ap-

becoming loose, he lost about 45. When Doctor Thornton arrived, not long after, he beheld a most melancholy sight; the disorder, by *bleeding*, not abated, but increased, and the spasms returning more rapidly. "Take care!" he would cry out, "I feel the fit coming on:" and he was terribly agitated, and foamed incessantly, and made a noise, to dislodge the phlegm from his throat, which some would liken to the snarling of a dog. The spectacle was most melancholy. He would at times become composed, and then looked around for his friends, whom he expressly named; and he requested, as he had not long to live, to hold his wife's hand, and to expire, giving her the last look. He called upon all to remember his poor wife, who had been a kind wife to him, and his infant family; and told her, that his only regret in dying was leaving her, who had been always so kind to him; but that they would again meet together in a happier world. He placed her hand into that of a neighbour, and begged he would protect the widow. He called upon the name of *Jesus* repeatedly. All that was given him he took, and said, "I fight hard to live:" but swallowed always with convulsive spasms, and with the greatest effort, always fearing suffocation, yet he exerted himself to the last. He said, it was an awful death, to be in the vigour of life, and in a moment, as it were, to be snatched from his good wife and infant family, through an animal. He met his end, however, with a courage, a resignation, a piety, an affection, such as would have done honour to any one in the most exalted sphere of life, and on Thursday night, at 12 o'clock, still holding the hand of his wife, quite exhausted, he sunk into an apparent placid sleep, without a groan or sigh.

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plied; but the pain became very sharp, and the hydrophobia came on in the night-time. He was blooded; but became worse every hour, and at last quite furious and outrageous. The bandage was thrown off from his arm, and he lost about 20 ounces of blood besides what had formerly been taken from him. This, however, made no abatement of the symptoms, and he died the same night.

CROUP.

CYNANCHE TRACHEALIS.

In a treatise on the diseases of infants by Dr. Underwood, this able physician enters into the consideration, whether this disease be *contagious* or *not*, and concludes, that it is not; but as a disease extremely fatal, accompanied with high fever, and often epidemic, it merits a place in this class of *contagious diseases*, which so often require the utmost attention and skill of the practitioner.

CONFINED ENTIRELY TO YOUNG CHILDREN.

This disease seldom attacks infants till after they have been weaned. After this period, the younger they are the more they are liable to it. The frequency of it becomes less as children become more advanced; and there are no instances of children *above twelve years of age* being affected with it. It attacks children of the midland countries, as well as those who live near the sea. It *does not appear to be contagious*, and its attacks are frequently repeated in the same child. It is often manifestly the effect of *cold* applied to the body; and therefore appears most frequently in the *winter* and *spring seasons*. It very commonly comes on with

the ordinary symptoms of a *catarrh;* but sometimes the *peculiar symptoms* of the disease show themselves at the very first.

PECULIAR SYMPTOMS.

The peculiar symptoms of this disease are the following: a hoarseness, with some shrillness and *ringing sound,* both in speaking and coughing, *as if the noise came from a brazen tube.* At the same time, there is a sense of pain about the larynx, some difficulty of respiration, with *a whizzing sound in inspiration,* as if the passage of the air were straitened. The *cough* which attends it is commonly dry, and if any thing be spit up, it is a matter of a purulent appearance, and sometimes films resembling portions of a membrane. Together with these symptoms, there is a frequency of pulse, a restlessness, and an uneasy sense of heat.

A PRETERNATURAL MEMBRANE.

There have been many dissections made of infants who had died of this disease, and almost constantly there has appeared a *preternatural membrane* lining the whole *internal surface* of the *upper part of the trachea,* and extending in the same manner downwards into some of its ramifications. This preternatural membrane may be easily separated, and sometimes has been coughed up by the patient.

THIS DISEASE IS INFLAMMATORY.

From the remote causes of this disease; from the catarrhal symptoms commonly attending it; from the pyrexia constantly present with it; from the preternatural mem-

brane being found in the trachea; and from the vestiges of inflammation on the trachea, discovered, upon dissection, we must conclude, that the disease consists in an *inflammatory affection* of the mucous membrane of the larynx and trachea, producing an exudation analogous to that found on the surface of inflamed viscera, and appearing partly in a membranous crust, and partly in a fluid resembling pus.

POWERFUL REMEDIES TO BE EMPLOYED.

If we judge rightly of the nature of this disease, it will be obvious, that the cure of it requires *the most powerful remedies of inflammation, to be employed upon the very first appearance of the symptoms.* When a suffocation is threatened, whether any remedies can be employed to prevent it, we have not had experience to determine.

BLEEDING.

Bleeding, both general and topical*, has often given immediate relief; and, by being repeated, has entirely cured the disease.

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* The topical bleeding is best performed by leeches: three or four may be applied at once on each side of the trachea, or on the trachea itself. Notwithstanding this recommendation of topical bleeding, *previous general bleeding* is absolutely necessary in every case, and ought never to be omitted. It frequently produces relief even while the blood is flowing from the vein; but, in these cases, it is imprudent to stop the evacuation, even on the total removal of the symptoms. As much blood must be drawn as the child can bear to lose, and leeches ought moreover to be applied, as above directed; for it frequently happens, that, when all the symptoms suddenly disappear, the disease returns in a few hours with redoubled violence, and speedily puts an end to the child's life.

BLISTERS.

Blistering also, near to the part affected, has been found useful *.

VOMITS.

Upon the first attack of the disease, *vomiting* †, immediately after bleeding, seems to be of considerable use, and sometimes suddenly removes the disease.

GLYSTERS.

In every stage of the disease, the *antiphlogistic regimen* is necessary, and particularly the frequent use of *laxative glysters* ‡.

ANTISPASMODICS.

Though we suppose that a spasm affecting the glottis is

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* As at the nape of the neck.

† This should be done with *antimonial wine*, adding a third of *tincture of squills*, giving a teaspoonful every quarter of an hour, until it operates. In very young children, the *ipecacuanha* wine answers best. These emetics require to be repeated, sometimes twice a day.

‡ Laxative glysters are to be carefully distinguished from purging glysters, which generally irritate too violently, and thus increase the inflammatory diathesis. It is of little consequence what the composition of glysters be, provided they contain some saline composition, and are sufficiently large. The common glyster with a little vitriolated kali (sulpas potassæ) as two or three drachms added to it, answers sufficiently well. It must be repeated every four hours.

often fatal in this disease, I have not found *antispasmodic medicines* to be of *any use* *.

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* Mr. Kendrick is of a contrary opinion. In the year 1794, he says, this disease was very general. After the employment of the remedies above mentioned, he gave five, six, or eight drops of *laudanum*, every two hours, until sleep, or a remission of the spasm took place; and by this method his recoveries were far greater, *than without the opium*. Of this he speaks in the most positive terms. *Syrup of poppies* I have myself found to be of service.

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN.

DR. RUSH'S PRACTICE.

CALOMEL.

For an account of this practice, we are indebted to Dr. Underwood, in his diseases of children. After bleeding and blisters, Dr. Rush employs *calomel*, and he is so sanguine in his hopes from this remedy, that he says *bark* is not more certain in intermittents. Dr. Underwood adds, with *calomel* I have found it necessary to have recourse to *emetics* and repeated bleedings with leeches, even in young infants; the *former* being administered frequently, so as to keep the infant throwing up as often as it *croupes* throughout the day.

DR. HAMILTON'S PRACTICE.

THE WARM BATH AND CALOMEL.

This practice is as follows. Immediately upon the attack, the child must be put into a tub of water, heated to the ninety-sixth degree of Fahrenheit's thermometer (that is, to the degree which the hand immersed in can easily bear), or must be wrapped up in a blanket wrung

out of hot water. Whether the *bath* or the *fomentation* be employed, it ought to be continued for at *least ten minutes;* and then the child should be carefully rubbed dry, wrapped up in warm flannel, and put to bed.

A dose of *calomel* is now to be given, and repeated every hour till the breathing be evidently relieved; when it is to be gradually discontinued, allowing at first two, then three, and finally four or five hours to intervene between each dose, according to the state of symptoms. This medicine commonly occasions both vomiting and purging; and in true croup, the first alleviation of symptoms generally follows the discharge of a great quantity of dark green coloured matter (like boiled spinage) by stool; but if the attack have been that of spurious croup, the breathlessness ceases after vomiting has occurred.

The dose of *calomel* is to be regulated principally by the age of the little patient. During the first year, it should be from one to two grains; during the second, two grains and a half; during the third and fourth years, from three to four grains; and during the fifth and sixth from four to five grains. During the course of the disease, nothing else than liquids should be allowed to the child. The room in which the little sufferer is kept ought to be moderately warm. When the disease has begun to yield to this treatment, nourishment suited to the habits and circumstances of the child is to be exhibited in small quantities, and often repeated. In some cases, considerable weakness remains after the crouping has ceased, in consequence partly of the violence of the symptoms, and partly of the operation of the calomel. Under such circumstances, cordials, particularly weak *white wine whey*, and *a blister* to the breast, become necessary. But if proper attention have been paid to the precaution *of lessening the number of doses of calomel, whenever the disease is in the least alleviated*, the ordinary health of the child will be found restored within a very short time after the symptoms of croup have disappeared.

For the cure of this formidable disease, practitioners formerly trusted chiefly to bleeding, with the use of vomits and blisters as auxiliaries; but the result of the practice was, in the more favourable cases, *a very considerable shock to the constitution*, and, in *the majority of instances*, the *death of the child*. These circumstances rendered it fair to make a trial of the practice of giving *calomel*, first suggested by

some American physicians. Accordingly, an old pupil recommended it to me about eight or nine years ago. I agreed to make a cautious trial of it; and having now employed it for *seven years*, and having most accurately and carefully attended to its effects, I consider myself fully warranted in giving the above directions. I have had the happiness to see the disease yield where its violence seemed to threaten almost immediate death; and among the little patients on whom it has been successfully tried, one of five months old had thirty-two grains of *calomel* within twenty-four hours; and another of the same age, the infant of an officer of excise, eighty-four grains within seventy-two hours. A girl, the daughter of a respectable tradesman in College Street, seven years of age, had, within little more than sixty hours an hundred and thirty-three grains, and two days after appeared as if she had never had a complaint. In every case where it was employed, previous to the occurrence of lividness of the lips and other mortal symptoms (amounting now to above *forty*), it has *completely succeeded*, both in *curing* the disease and *in preventing any shock to the child's constitution*.

DR. ARCHER'S PRACTICE.

SENEKA ROOT AND MERCURY.

An account of this practice we have in a letter from that physician to Dr. Barton, a full account of which I had communicated to me from America.

Dear Doctor,

A particular description of this disease is unnecessary, as it has been well described by several medical authors. I would only remark, that it is a disease incident to the younger part of our species; that I believe it to be a topical disease, confined to the trachea arteria, and in its advanced stage to the several ramifications thereof; that it is produced by a membrane or slough, formed of inspissated mucus, that adheres to the trachea while the more liquid parts are carried off by the air in expiration; that the first formation is near the glottis, at the be-

ginning of the trachea; and that it gradually extends down the trachea, even to its ramifications, until breathing is materially injured, and finally suspended. I have also thought that this membrane produces irritation, from its occasioning an unaccustomed sensation in the trachea, causing spasmodic affections, so as to bring on a more difficult breathing at one time than at another

The cure, in my opinion, consists in the separation or solution of the membrane or slough that is formed in the trachea arteria. For this purpose, I have, in a great many instances, found a decoction of the *seneka* the most powerful medicine in the cure of this disease; and I am happy to tell you that I believe it may be depended on. I make a strong decoction of the root, in the following manner, viz.

R. Rad. Senek. in pulv. crass. unc. ss—coque in
Aq. fontan. unc. viii. ad. unc. iv.

Of this I give a tea-spoonful every half hour, or hour, as the urgency of the symptoms may require; and at intervals a few drops, to keep up the stimulus, until it either acts as an emetic or cathartic. I then repeat it, in smaller quantities, so as to preserve the stimulus of the seneka constantly in the mouth and throat.

The stimulus of the seneka, in the mouth and throat, is very diffusive: its effects extend to the upper part of the trachea; and, if the formation of the membrane has recently commenced, tend to its solution. But, if the membrane is formed, and its texture has become more firm and adhesive, the seneka penetrates to the trachea, and occasions an increased secretion, which being more liquid, and less adhesive, than the membrane, disposes it to be more easily separated and broken, so that it may be detached and discharged by the efforts of coughing, or by vomiting, when the seneka acts as an emetic. When this takes place, a cure is reasonably to be expected. And this appears to me to be the operation of the seneka, in the cure of this disease.

To be more particular. The method in which I proceed is according to the state of the disease when I am called. If it is a recent attack, I give a tea-spoonful every half hour, or hour, and a few drops at intervals, so as to keep up a constant stimulus; and in this way I have removed the complaint; but if more advanced, and the breathing more difficult, with a peculiar harsh or shrill sound, like air forcibly drawn

through a small aperture, attended with a retraction of the upper part of the abdomen under the cartilages of the ribs, I then give calomel freely and frequently, and rub mercurial ointment on the throat and adjacent parts, so as to affect the glands of the throat and mouth as quick as possible. This I do, that the mercury may co-operate with the action or stimulus of the seneka, and thereby hasten the separation of the membranous substance formed in the trachea.

I do not conceive that the seneka acts altogether from its emetic, or expectorant, or diaphoretic powers, otherwise, other emetics and diaphoretics would cure the disease; but chiefly from its stimulant effects, and the extension of that stimulus into the trachea.

In the above method I have succeeded in the cure of the croup, even beyond my most sanguine expectations.

This last fall, I have had more cases of the croup than I have ever known in our part of the country. In the majority of these cases, the decoct. senek. has succeeded without the mercury; and, probably, would have in all, had I thought it prudent to risk the event.

Before I close these observations, I would just mention that Dr. Underwood, in his work on the Diseases of Children, if I forget not, recommends gum. asafœtid.* as a very powerful medicine in the cure of this disease—as an antispasmodic. But I conceive that its beneficial effects must proceed from the stimulating powers of the medicine, and the extension of the stimulus into the mouth, throat, and even the trachea, and not to its antispasmodic qualities. Indeed, it is my belief that there are several other medicines that would be equally powerful with the seneka, in the cure of croup; such are the mezereon, pariera brava—and a solution of corrosive sublimate, a drop at a time, till it became emetic. But as the seneka has succeeded with me, to the utmost of my wishes, I have rested satisfied.

March 17, 1798.

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* This is recommended by Dr. Millar, but is disapproved of by Dr. Underwood.

DOCTOR THORNTON'S PRACTICE.

FOXGLOVE AND AZOTIC GAS.

Some cases will occur, in which children will not bear *violent depletions*, and when these are contra-indicated, I have been in the habit of giving ten drops of *tincture of foxglove*, combined with 15 or 20 of *antimonial wine*, and three drops of *tincture of squills*, every three or four hours, the patient at the same time frequently inhaling the *azotic gas*, made by the combustion of a little æther, which has soon taken off the *inflammation* of the *trachea*, and of *the lungs*, and if begun before the membrane has been formed, has been hitherto marked with constant success.

DOCTOR THOMAS'S PRACTICE.

DIGITALIS AND VAPOUR OF ÆTHER.

Inhaling the vapour arising from warm water with a small addition of æther, may possibly prove a good auxiliary, both in lessening the violence of the spasms, and assisting expectoration.

Some cases of this disorder have been successfully treated with the digitalis*. In these, the tincture was employed in the dose of five drops, repeated every four hours. Its good effects would appear to depend partly upon its operating quickly and powerfully on the arterial system, and thereby stopping the rapidity of the inflammatory symptoms, and partly on its allaying the spasmodic irritation. I have myself employed it in two or three cases of croup, and with much seeming advantage, but I always premised general as well as local bleedings.

After copious depletion by bleeding, both general and topical, vomiting, purging, and blisters, when the inflammatory symptoms have subsided, and the disease seems almost entirely spasmodic, we may venture to give a few drops of the tincture of opium every two or three hours, combined with the wine of ipecacuanha, or solution of tartarized antimony, for the purpose of procuring rest and a remission of the spasms †.

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* See Med. and Phys. Journ. vol. iv. p. 20.

† Vide The Modern Practice of Physic, by Dr. Thomas.

TINEA CAPITIS,

RING-WORM.

THE *Tinea*, when it affects the body, is easily removed, and usually gives way to a little *ink* rubbed on the part affected, a common practice in boarding-schools, but when it attacks *the head*, it becomes a most serious disease. It is known by its circular appearance, the size of a silver penny, variously interspersed over the scalp. This disease, called by the learned Dr. Willan, *Porrigo scutulata*, affects children two years' old or upwards. It continues, in many cases, for a series of years, and is more unmanageable than any other species of Porrigo.—Those, with whom it originates, are often pale, languid, emaciated, and subject to induration of the glands. By contagion, however, the disease may be communicated to others who are in perfect health. So rapid is the communication, in many instances, that I have seen fifty children at a school, affected in less than a month, where there was but one primary source of contagion. Some hair-dressers continue thoughtlessly to use the combs, scissars, &c. they had employed on the infected children, and thus, by a kind of inoculation, diffuse the malady among persons of all ages, sexes, and constitutions. It is singular, that ladies are not struck with the propriety of keeping, for their own use, an apparatus for cutting and dressing hair, but supinely incur, every week, the risk of contamination by the most loathsome and perverse of cutaneous maladies.

Many persons refer the introduction of this complaint among the scholars at the numerous seminaries near London, to children annually sent from India or the West Indies, where it is supposed to predominate. Such children, whether infected by their swart attendants, or otherwise, do occasionally bring the disorder with them, but, if admitted into schools, they are kept apart, till completely cured, and are not after-

wards more liable to it than children born in this country. On the other hand, the Porrigo scutulata occurs in schools and academies, where no strangers have ever been admitted. Thus, during the last two years, children affected with it have been brought to me, from *one hundred and twenty-four different seminaries*, containing only natives of London and Middlesex, or the adjacent counties. It is, therefore, unnecessary to search beyond the seas for the cause of a disorder so frequently originating among ourselves in delicate and neglected children. One of these, recently cured, has been perhaps sent to a boarding-school without even new clothing. The consequence is, that the greater number of the scholars, however neat and cleanly they may be, receive infection before any person concerned is aware of the danger. This temporary trouble to the immediate sufferers sometimes terminates very unjustly in the total ruin of the superintendents of the school, who are condemned by the irritated parents for what neither human power nor foresight can always prevent.

DOCTOR HUME'S PRACTICE.

COCCULUS INDICUS.

Before any applications are made to the scalp, in this disorder, the hair should be shaven*, and the scab gently removed by washing with warm water and fine soap. Some of the ointments usually employed†

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* In the advanced stages of the complaint, the operation of shaving the head will be facilitated, and the pain attending it diminished, by the previous application of proper remedies, after cutting the hair close.

† Viz. Unguentum Zinci, Ung. Hydrargyri Nitrat. Ung. Hydrarg. Nitrico-Oxyd. Unguentum Picis, Unguentum Sulphuris, &c.

Dr. Willan generally directed an oilskin cap to be worn, chiefly for the purpose of keeping the dressings moist, and retaining them in contact with the scalp.

are then beneficial, but I think not in so great a degree as that prepared with the Cocculus Indicus, finely pulverized. My attention having been first directed to it by Dr. James Hamilton, of Edinburgh, with whose abilities and eminence few persons interested in medical science can fail to be acquainted, I beg leave to quote his observations on the subject, kindly transmitted to me in the year 1807.

"I had long regretted the unhappy situation of those who, exposed to "be attacked with Tinea Capitis, a disgusting and stubborn disease, "were without hopes of a cure; when the inaugural dissertation of "Dr. John Hume, published at Edinburgh, in September 1803, fell un- "der my observation. This gentleman recommends, in unqualified "terms, the nut of the Cocculus Indicus for the cure of Tinea; he "says, 'Eo, curavi solo infantes diu Tineâ laborantes, qui aliis reme- "diis omnibus obstiterunt.'

"I have since followed Dr. Hume's practice with much success—I "have found this remedy a sure palliative in every instance; it gene- "rally operates mildly; it quickly removes the scabby crust, and leaves "the scalp in an apparently sound state.

"I speak thus guardedly, because I am aware that a disease which is "apt to return, and at a distant period too, may seem to be cured, "when it is in fact only mitigated.—On this account, much experience "may be requisite to ascertain satisfactorily the efficacy of the Cocculus "Indicus; to confirm its utility, it may even be proper to continue it "for a considerable time after the disease has disappeared.

"I had lately a patient, a boy about eleven years of age, in whom "the hairy scalp was wholly encrusted with the scab of Tinea, which "during the space of two years, had resisted various applications.—In "the month of October, 1806, he became my patient, and began to use "the Cocculus Indicus, which was continued, with the interruption of a "very few days, for six months. It is now three months since this pro- "tracted course was finished; he continues well; his hair, which has "been suffered to grow, is thick and natural to the sight and touch.

"Dr. Hume advises the whole nut, the shell as well as the nu- "cleus, to be reduced to a powder, and to be applied by itself, or "under the form of an ointment. I found the powder was retained "with difficulty, and I formed it into ointment with axunge, and oil of "rape-seed. I now omit the latter ingredient, and use an ointment

" made of one part of the powdered nut, and three parts of axunge.
" I direct the hair to be cut short, and the head to be shaved there-
" after as soon as may be. This may generally be accomplished after
" the second or third application of the ointment. I commonly order
" the ointment to be applied every morning and evening; the head to
" be frequently shaved; and to be washed occasionally with soap and
" water. In one or two cases, I have interposed a wash of the solu-
" tion of Acetite of Lead, when considerable irritation, which is not
" often the case, has been excited by the ointment *."

DR. HAMILTON'S PRACTICE.

VINEGAR AND UNGUENTUM CITRINUM.

Professor Hamilton, of Edinburgh, asserts (Hints for the Treatment of Children, page 109), that " the slight or incipient degrees of this " disorder may be readily cured, by having the affected parts bathed " every night with hot vinegar, and afterwards rubbed with the mild " unguent. citrinum." In the more advanced stages of the complaint, he highly extols the efficacy of the unguentum ad scabiem of H. Banyer, (see his Pharmacopœia Pauperum, 4th ed. 1739) and says, it has often succeeded in curing it, after the failure of other remedies.

Dr. Hamilton orders the head to be kept shaved, and anointed for a

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* Dr. Hamilton favoured me with the particulars of several cases, in which the Unguentum Cocculi Indici had been employed. He concludes his letter in the following terms: " I accompany this account " with proofs of its utility, as drawn from the cases of patients treated by myself in the Royal Infirmary of this place. These cases possess a peculiar character of authenticity, such as I have endeavoured " to particularize in the preface to my Observations on Purgative Medicines; they are in fact, in this respect, unparalleled in the history of " Medicine; and may be readily admitted in evidence of the reality of " my position which they support."

number of nights, proportioned to the virulence of the affection, with this ointment: which he dilutes for delicate children, with an equal portion of simple cerate, and occasionally alternates its use with that of common basilicon.

DOCTOR UNDERWOOD'S PRACTICE.

If the complaint be taken early, before it has spread far over the head, and whilst the scabby patches are small and distinct, it may frequently be cured by an ointment made of equal parts of sulphur, flour of mustard, and powder of staves-acre, mixed up with lard or other unctuous substance; or by the sulphur ointment, with a small addition of the calx hydrargyri alba. And this last preparation may very safely be made use of, if the patient be kept within doors, and the body properly open; as it will be necessary to rub in only a small portion, once or twice a day, on the parts immediately affected. But if the disease should spread, or has already extended itself over a great part of the head, the hair must be shaved off, and the head washed twice a day with a strong decoction of tobacco; repeating this process till the scabs disappear, and the hair grows up from the parts they had occupied. Or, instead of the decoction of tobacco, the head may be well washed with the lotio saponacea, with the addition of a small quantity of the aqua kali puri, and the scabs anointed with the unguent. hydrargyri nitrati in the place of the sulphur ointment and calx of mercury, the former being a very powerful, as well as a safe application, and may be used in any quantity that may be necessary.

MR. COOKE'S PRACTICE.

For the cure of this disease, the following formula is that which I have been in the habit of using:

R. Hydrarg. nitrico-oxydi (bene leveg.) dr. 2.
Ung. hydrarg. nitrico-oxydi, unc. ss.
Cerat. cetacei, dr. 2. M. intime ut f. liniment.

Oblinatur pars affecta, omni nocte per tres, vel quartas vices.

The hydrargyri oxymurias and the common flour of mustard, in the form of a paste, I have found equally efficacious; being well rubbed for three or four nights upon the parts affected *. And I am induced to think that arsenic, and the antimonium tartarisatum †,—as also hellebore, bryony, sabin, and other stimulating vegetables, will answer the same purpose.

I have generally remarked, that after the third or fourth application of the ointment, the disease has been arrested; and that sufficient inflammation round the patch or ring has been excited.

I then withdraw the stimulus, and on the following morning direct the parts to be thoroughly washed with warm soap and water, and to remain without any further application.

A few days have usually been sufficient to satisfy me upon the success of my treatment, at which time, the simple inflammation induced by the stimulus retires, and if the disease does not extend beyond its original spot (which circumstance may be ascertained by other hairs falling off) I have always found that it has been completely eradicated.

Fresh hairs are soon seen above the cuticle ‡, firmly attached to their roots, though at first soft and downy, and of a lighter colour than the original.

Having repeatedly cured *tinea* in the manner mentioned, not confining myself to the use of mercurial preparations, but employing hel-

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* "Quod si ulcuscula cava fiant, quod in alopeciâ, et malo mortuo frequenter accidit post usum balnei vaporei non in utiliter incarnandis illis emplastrum de gummis imponemus, vel necessarius est itaque *mercurii usus*, ipso namque adhibito adeo clarificatur, ac nobilitatur caput."

Paracelsus de alopeciis, morbis mortuis, &c.

† "Arsenici præparationibus cujusve generis corrodentia ulcera, fistulæ, cava ulcera, &c. curantur namque veluti, ubi ipsud venenum adhuc est, dolores gravissimos infert, sic ubi veneni vim amisit, nullo penitus dolore affligere solet."—PARACELSUS.

‡ "The best prognostic is when hairs begin to push out on the edges of the areas."—MOTHERBY.

lebore, mustard, &c. I have been induced to draw this conclusion, that mercury was not a specific in this disease, as vegetable substances had proved equally efficacious; but that its removal depended upon encouraging simple inflammation in lieu of the morbid action *, which was going on in the secreting membrane of the hair.

SCALD-HEAD.

When *tinea* has been allowed to run to excess, and become scald-head, some modification in the treatment will be found necessary with respect to the ulcerated parts of the scalp.

The unguentum hydrarg. nitrico-oxyd. reduced by a third part of the ceratum cetacei, has been found the best application in this stage of *tinea*.

The same curative principle must be kept in view in this aggravated state, otherwise the patient will rapidly become a dreadful sufferer.

I am willing to hope that scald-head as thus described is a very rare disease; and if the plans of treatment I have proposed should be found permanently useful, I trust that in time we shall scarcely hear of its existence.

From the perusal of those modern publications which have touched upon this subject, as well as from the conversation of medical practitioners, I am fully aware that the opinion here given of this complaint will not meet with general concurrence; but till stronger facts are offered to me than those which are already before the public, I am surely justified in asserting the identity of *tinea* and *scald-head*.

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* Some observe upon the friction or rubbing of the part with coarse cloths, if redness does not succeed, the case is irremediable; and that the sooner the redness does appear, the more hopeful and speedy the cure.—*Turner on the falling off of the hair*

MR. MORRISON'S PRACTICE.

Take of ale, one pint; of the finest flour, three ounces: mix them intimately; and having set them over a very brisk fire, add two ounces of yellow resin, stirring them constantly until they shall be perfectly incorporated, and take on a smooth gelatinous appearance. The head is to be well washed, and then a bread and milk poultice applied for five hours, and the plaster afterwards applied, spread on strips of linen, which are to be renewed once a day.

DOCTOR UNDERWOOD'S PRACTICE.

This complaint is sometimes of long standing before medical assistance is solicited, and is not only extended over all the head, but the scabs are thick, and rise high above the surface, returning as often as they may fall off. I have, however, never failed to cure the common tinea by a method perhaps well known, but too seldom complied with in time, on account of its supposed severity. It consists only in well washing the head, first close shaved, with a piece of flannel and a strong lather of soap-suds, and then rubbing in very forcibly an unguentum picis, made of the *petroleum*, instead of the pix liquida; and if this fail, adding a good quantity of the pulvis hellebor. alb. or other safe depilatory, for near an hour at a time, always using it very warm; and covering the head with a bladder, to preserve the ointment on the part, as well as to keep it from sticking to the cap, or other covering made use of. When this has been done three or four times, not only the scabs, but the *hairs*, will also *loosen*, which must be *pulled out*, however unpleasant the operation may be, as it will, indeed, prove a kindness in the end; and must be repeated till all the hairs be taken out: after which new hair will rise free from scabs, which is a sufficient indication that the disorder is effectually removed. Some writers, with the like view, advise the application of repeated *blisters*, after the head has been close shaved.

DOCTOR THORNTON'S PRACTICE.

I have applied the *unguentum citrinum* over the parts diseased on the scalp every night, by melting the same in a gallipot, and ordered it to be washed off with warm soap and water, well rubbed, and if flannel can be used, the better: after this, a lotion of distilled vinegar, adding to a pint two drachms or more of purified salt-petre (sal prunel). The hair to be shaved or cut short at the onset. This has usually succeeded in five or six weeks. In cases of long standing, I have ordered the following ointment:

R. Antim tart, scr. 1.
Hydr. muriat. gr. 2.
Calomel. gr. 4.
Axung. dr. 4.
Ft. Ung.

The size of a pea is rubbed into the patches every night, until an humour appears, these are then to be drest with common basilicon ointment, and when healed, to be washed with the vinegar and nitre lotion.

In some cases I have drawn the places into a wound by dressings of the Ung. Sabin. and Ung. Lyttæ a a unc. 1. To be renewed every four hours, converting these into simple wounds.

In very obstinate cases, I have used *arsenic*, a grain to half an ounce of lard, to be rubbed into the parts affected, using a small quantity each night.

In the scald-head I have seen great good by using a poultice of oatmeal and honey to the part, and then contriving a cap fastened on by the adhesive plaster, and filled with fixed air. Where this cannot be readily applied, I have added to it the powdered charcoal. The poultice to be used every night, adding some lard to it, and washed off in the morning with warm soap and water.

A POPULAR REMEDY.

Smear a brass skillet with fresh butter, and when green with *verdi-*

gris, to be employed every day, until cured, or the *verdigris* from a parish bell is used for the same purpose.

REV. MR. LOYD'S SECRET.

This gentleman has a school at Southgate, and possesses a *family secret*, that has never yet failed in the worst cases. I have with pleasure witnessed several of his extraordinary cures. It would be unfair to this gentleman to declare his remedy.

MR. COOPER'S PRACTICE.

First shave the head. The scabs are next to be softened by rubbing them well with *fresh butter*, and as many of them taken away as possible. This being accomplished, let the head be next washed with some strong *soap-suds* and a *flannel*; and the *common turpentine soap* is the best for the purpose.

The scalp having been dried, is afterwards to have applied to it an ointment, consisting of the *unguentum picis*, and the *unguentum sulphuris*, mixed together in equal proportions, and spread upon a piece of bladder, or green oil-skin, which latter substance alone will, when aided by properly washing the parts, effect a cure of itself.

The dressings are to be changed every day, and the parts shaved and well washed with strong soap-suds equally often. Cleanliness, indeed, has astonishing effect in curing tinea capitis.

I have met with instances, however, which resisted the foregoing plan, and also the application of the *unguentum hydrargyri nitrati*, *hellebore ointment*, &c. The cases in question, however, always yielded to the employment of a lotion composed of a dram or two of the *kali sulphuratum*, dissolved in a pint of *lime-water*. Linen, wet with this solution, was kept constantly applied to the parts, which were shaved and washed as often as is above recommended.

ÆGYPTIAN OPHTHALMIA.

DOCTOR UNDERWOOD'S PRACTICE.

A DISORDER of the eyes and lids has of late years been very prevalent in this country, and has been communicated through our soldiers who returned from Egypt, and is very contagious; and of which I have seen, says Dr. Underwood, several instances, both in children and adults: it is always, I believe, attended with excruciating pain, and frequently, with at least a temporary loss of sight. From my own experience, I shall only say, that the above-mentioned applications are the best I am acquainted with, together with very lightly covering the eye with the crumb of a new French roll, with a suitable hollow cut in it, and soaked in the *aqua Litharg. acetat. dilut.* which should be renewed as often as it shall become anywise hard or dry. I am aware, that every degree of pressure is strictly interdicted by some practitioners whom I highly honour for their successful treatment of disorders of the eyes; whilst the immediate use and benefit I have known to follow this application makes it my duty to announce it.

DOCTOR THORNTON'S PRACTICE.

This disorder having prevailed in my family, and being laid up with it myself for upwards of three weeks, leeches, purging, lotions, all being employed without seeming benefit, and having under my cure for this same complaint many artists, amongst whom was Mr. Tomkins, engraver to the Royal Family, where the eye was a most precious organ, and having myself to examine the tongue, and count the pulse of my

patients, I resolved to employ a stronger lotion for the eyes, and invented the following:

R. Zinci Vitriolat. scr. 1.
Acet. distil. dr. 2.
Aq. Rosæ, dr. 4.
Ft. Lotio.

To be used very frequently during the day.

The pain to be disregarded. By the next morning the tumified eyelids were reduced, pain in the eyes gone, and before night I was quite well. The same operated, like a charm, with all others. Mr. Tomkins, and his whole family, were well with same expedition, nor as yet has it failed. Sir Sidney Smith, some of whose family I attend, assured me, it was the same as the Ophthalmia in Egypt, although less violent in its attack.

THE ITCH.

PSORA.

This is another of those afflicting diseases which spreads by *contagion*, and in cold climates, where persons are much confined within doors, and where the amusement is chiefly that of social intercourse, it is more apt to appear, especially amongst the poor, whose children play much together, and cleanliness is not observed.

This disease is hard to be discriminated from common eruptions, but as occupying chiefly the joints, and betwixt the breasts, it may be discerned, more especially by hard, solid mahogany, or black-coloured round scabs, the size of the smallest pin's-head, interspersed over the arms. The excessive itching at night also is another indication. At first it is highly contagious; but is less so, as it advances, and appearing at spring and fall, is then little, if at all, infectious. This disease is easily removed by the following preparation:

DR. THORNTON'S PRACTICE.

SULPHUR.

R. Flor. Sulph. lot. dr. 2.
Rad. Helleb. alb. dr. 1.
Axung. dr. 4.
Ol. Essent. Rosæ. gtt. 4.
Ft. Ung.

The joints are to be *smeared* with this for three nights, and washed off with warm soap and water in the morning, when little or no smell of

sulphur will be produced, and the following medicine should be taken at the same time every night for a week.

R. Flor. Sulph. lot. dr. 2.
Confect. Amygdal. dr. 1.
Spir. Junip. c. dr. 2.
Syr. Tolut. dr. 2.
Aq. Cinnam. dr. 4.
Aq. Rosæ, unc. 6.

Ft. Mist.

Take two table-spoonsful night and morning; for a very young child, one table-spoonful.

The clothes should be then all clean, and the *smearing*, if required, after an interval of three days and nights, should be repeated.—This plan has never failed to produce a cure, and is to be preferred to all other applications, as being perfectly safe and certain.

M. DESORMEAUX'S PRACTICE.

MERCURY.

This gentleman, who is an eminent apothecary, speaks highly of the following preparation, which has not the least smell, and is to be used every night, employing as much as will fill a table-spoon, melting it before the fire, and washing it off the following morning. He says, it has as yet never failed.

R. Adipis Suillæ, dr. 12.
Ung. Cerat. Plumbi superacet, dr. 1.
Hydrarg. Nitrat. dr. 5.
Pulv. Hydrarg. Præcipitat. Alb.—gr. 24.
Hydrarg. Oxymurias.—gr. ss.

M. Ft. Unguent.

DR. THOMAS'S PRACTICE.

TOBACCO.

In everal cases of *Psora*, I have succeeded by employing merely a *strong infusion of tobacco* as a lotion, two or three times a day.

CONCLUSION.

Thus have we terminated a long class of disease of the most important consideration, as it includes the most formidable disorders which attack adults, also the chief diseases which carry off children before "they have scarce seen the glimpses of the moon," or tasted the sweets and bitters of life. They have narrow conceptions, not only of the Divine Goodness, but of the gradual progress of human knowledge, who suppose that all pestilential diseases shall not sooner or later cease to be the scourge and terror of mankind: let then the knowledge of this progress of medicine be generally diffused; let the confidence it merits be placed upon it; let the ancient practice, if wrong, be discarded, and no more will *pestilential diseases* be numbered among the widest outlets of human life.

INFLAMMATIONS.

PHLEGMASIÆ.

INTRODUCTION.

SIGNS OF EXTERNAL INFLAMMATIONS.

WHEN *any part upon the surface of the body* is affected with unusual redness, heat, pain, and tumour*, we name

* External inflammations are the several tumours, or phlegmons, which properly fall under the province of the surgeon. I shall only name here the *whitlow* and *boil*, which are best treated with oatmeal and honey, to draw them, before and after these are opened, which should be done early. *Inflammations* from burns, &c. should be treated by taking off the superabundant heat by the use of cold water, or Goulard's extract and water, and *Gangrene*, the *consequence* of *inflammation*, by all tonic means and the use of the serpentaria.

CASE 1.

Mr. Weston, a gentleman of fortune at Clay Hill, Enfield, had, from a fall from his horse, and bruise, a violent inflammation come on; the usual cooling things were applied, but the limb upon which the horse fell mortified: I was sent for, Mr. Vaux, an eminent surgeon in London, having given up the patient as lost. As the serpent-root (serpentina) is said to cure the bite of the serpent, and is good in all putrid fevers, I ordered a scruple of the same, with four drops of laudanum, every three hours, and bottled porter for drink, when to the surprise of every one he recovered.

CASE 2.

Mr. Cossart, of the record office, Tower, by a fall from a coach, and

the disease an Inflammation or Phlegmasia. These symptoms of inflammation are never considerable, without the whole system being at the same time affected with pyrexia.

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the wheels going over his arm, the laceration was so dreadful that mortification ensued. Mr. Astley Cooper, the first anatomist and practitioner of the age, declared, in consultation with myself and other surgeons, that the whole College of Physicians or Surgeons, could not save him, or any operation be performed, as mortification always extends to the parts operated on; but yielding to my wishes, the serpentaria, opium, and bottled porter, also saved this gentleman's life.

CASE 3.

Mr. Oliphant had a mortification of the great toe, and Mr. Thomas Blizard gave up all hopes of his recovery. By my advice, he took the serpentaria, and although 80 years of age, was perfectly restored from the use of this remedy.

Mr. Williams, apothecary, and many others, in similar circumstances, by the use of this remedy, first I believe introduced by me, owe, under the blessing of God, their lives to it.

If it be allowed, after mention of so serious a complaint, to introduce another effect from inflammation, I shall mention pernecio, the chilblain. It arises from cold, and then the excitement of heat. The stagnated blood must be propelled by stimulants, as warm water in which mustard is put, camphorated spirits of wine, the compound saponaceous liniment, frictions, and warmer gloves and stockings. Washleather socks have prevented them, also gloves with double lining, and with ladies velvet bracelets. I have often cured them with the following ointment:

R. Antim. tart. gr. 10.
Hydr. muriat. gr. 2.
Ung. Spermacet. dr. 2.
Ft. Ung.

SIGNS OF INTERNAL INFLAMMATIONS.

As the external, so likewise the internal parts may be affected with inflammation; and we judge them to be so, when, together with *pyrexia*, there is *a fixed pain* in *any internal part*, attended with some interruption in the exercise of its functions.

APPEARANCES OF THE BLOOD.

We judge of the presence of inflammation also from the *state of the blood* drawn out of the veins. When the blood, after cooling and concreting, shows a portion of the *gluten* separated from the rest of the mass, and *lying on the surface of the crassamentum*; as such separation happens in all cases of more evident phlegmasia; so in ambiguous cases, we, from this appearance, joined with other symptoms, infer the presence of inflammation *. At the same time, it must be

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Cover the chilblain, before it is broken, with this, by means of smearing a pin's head with it, which is enough, and well rub it in. If it produces a blister filled with water, open this with a needle. In this way, *chilblains* are readily cured.

* The blood, when taken out of the living vessels, spontaneously separates into two distinct parts, the serum and the crassamentum: the last is a compound substance, consisting chiefly of coagulating lymph, and red globules, the most heavy ingredients in the blood. Blood, taken away from persons affected with inflammation, is longer in coagulating, and coagulates more firmly than in other instances. Hence the red globules, not being so soon entangled in the lymph, descend, by their gravity, more deeply from its surface, which, being more or less divested of the red colouring matter, is, from its appearance, termed the *buffy coat* or *inflammatory crust*. The firmer and more compact coagula-

observed, that as several circumstances in blood-letting may prevent this separation of gluten from taking place in blood otherwise disposed to it*; so, from the absence of such appearance, we cannot always conclude against the presence of inflammation.

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tion of the lymph compresses out an unusual quantity of serum from it, and the surface of the sizy blood is often formed into a hollow, the edges being drawn inward. These changes in the blood are, in some cases, a more infallible proof of the existence of inflammation, than the state of the pulse itself. At the same time, it is probably only a criterion of some unusual operation going on in the system; for the blood taken from pregnant women is always found to exhibit the above appearances. In peritoneal inflammation, the patient sometimes seems to be in the most feeble state, and the pulse, abstractly considered, would rather induce the practitioner to employ tonics and stimulants, than evacuations; but, should the continuance or exasperation of the disorder, or any other reason, lead the surgeon to use the lancet, then the *buffy coat*, and the *concave surface* of the blood, clear away all doubt concerning the existence of inflammation.

* Thus from cupping, and the blood discharged from leeches, there is not this buff coat, and bleeding in one bason is apt to deceive; hence practitioners fill different cups, when only the first filled will exhibit the buff-coat, and cupped, or artichoke-bottom appearance, with many bladders, called its honey-comb appearance, also bleeding from a large or small orifice creates a difference, for the blood, streaming quick, has more vital power, and hence shews these appearances denoting inflammation most.

ORGANIC INFLAMMATIONS.

PHRENITIS.

PHRENSY.

THREE KINDS.

I SHALL begin with one of the most terrible of human diseases, which is seldom *idiopathic*, but generally *symptomatic*, and more usually seen as a concomitant with *mania*.

CAUSES.

I once saw it brought on by *bathing* in an hot sun in August.

Occasionally I have seen it, in *plethoric* habits, arise from *drunkenness* *.

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* Drinking is undoubtedly the most miserable refuge from misfortune: it is the most broken of all reeds. This solace is truly short-lived; when over, the spirits commonly sink as much *below* their usual tone, as they had been before raised *above* it. Hence a repetition of the dose becomes necessary, and every fresh dose makes way for another, till the miserable wretch is rendered a slave to the bottle; and at length falls a sacrifice to what, at first, perhaps, was taken only as a medicine. No man is so dejected as the drunkard when the debauch is over. Hence it is, that those who have the greatest flow of spirits while the glass circulates freely, are of all others the most hipped when sober.

SYMPTOMS.

The symptoms by which this disease may be most certainly known, are, a *vehement pyrexia*—a violent deep-seated *head-*

It may be pleasant to get drunk, but the next day is a day of uneasiness, and the third ought to be a day of repentance. To those who drink to drive away care, I would recommend the careful perusal of the following lines—

Unhappy man, whom *sorrow* thus and *rage*,
Two different ills, alternately engage.
Who drinks, alas! *but to forget*—nor sees
That melancholy, sloth, severe disease,
Memory confused, and interrupted thought,
Death's harbingers, lie latent in the draught,
And in the flowers that wreath the sparkling bowl
Fell adders hiss, and poisonous serpents roll.

PRIOR.

Let those who have been enticed frequently to taste spirituous liquors, or rich cordials, till at length they begin to have a fondness for them, reflect a moment on the danger of their situation, and resolve to make a speedy and honourable retreat. Remember, that custom soon changes into habit; that habit is a second nature more stubborn than the first, and of all things most difficult to be subdued. Remember, that it is by little unsuspecting beginnings, that this unfortunate vice is generally contracted, and when once confirmed, rarely terminates but with life! Learn then, in time, to resist this bewitching spirit, whenever it tempts you. Then you will find yourself so perfectly easy without it, as at length never to regret its absence; nay, peculiarly happy, in having escaped the allurements of such a dangerous and insidious enemy.

The manner, however, of overcoming this fatal propensity, when once formed, requires some address in the physician. It is in vain to desire an immediate desertion of this habit. Human nature is too frail

eche—a *redness* and *turgescence* of the *face* and *eyes*---an *impatience* of *light* or *noise*---a *constant watching*---and a *delirium impetuous* and *furious*.

BLOOD-LETTING.

The cure of phrensy is the same with that of inflammation in general; but in phrensy the most powerful remedies are to be immediately employed. Large * and repeated *blood-letting* is especially necessary; and the blood should be drawn

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It cherishes knowingly the usurper in its bosom. Art must be used. The drunkard must be advised to change his liquor, taking rum instead of brandy, and then Geneva; afterwards it must be diluted, and in time it may, without much difficulty, be changed for ale, or porter, and a habit broken, or else fixed upon some less hurtful liquor than spirits.

To those who pride themselves in living fast, and are bent upon "a short and merry life;" though, in truth, it is a short and miserable one; they will, doubtless, spurn at these admonitions, and run headlong to their own destruction. Strange infatuation! Can you submit to such despicable bondage, and tamely give up your freedom without one generous struggle? The present conflict, remember, is not for the fading laurel, or tinselled wreath, for which others so earnestly contend, but for those more blooming, more substantial honours, which HEALTH, the daughter of TEMPERANCE, only can bestow. For it is thine, O HEALTH, and thine alone, to diffuse through the human breast that genial warmth, that serene sunshine which glows in the cheek, shines in the eye, and animates the whole frame!

* Bleeding largely here is necessary ad deliquium. Beside the blood-letting, as advised by Cullen, leeches should be applied to the temples; and in order to make them fix, it is necessary that they should be put near the fire, to enliven them; and to fix them on the proper spot, they must be put into a wine-glass, also warmed, and thus applied to the part.

from vessels as near as possible to the part affected. The opening of the *temporal artery* * has been recommended, and

* Whatever good *in theory* has been expected from *arteriotomy*, and however some of its supporters may have recommended it, not only as being in many instances preferable to venesection, but as an operation perfectly safe even in vessels of considerable size, yet the most strenuous friends to the practice have shrunk from any real attempt of this kind on the larger arteries. Instances have no doubt occurred of large arteries having been opened without any danger ensuing; but these are so exceedingly rare, that no practitioner of experience will, from that consideration, be induced coolly to proceed to open any artery of importance. The smaller branches of arteries may indeed be opened with great safety, when they are not deeply covered, and especially when they lie contiguous to bones; but in any of the larger arteries, the attempt must be always attended with so much hazard, and the advantages to be expected from it, in preference to venesection, are apparently so trifling, as must in all probability prevent it from ever being carried into execution.

There are very few arteries, therefore, which, with any propriety, can be opened: the different branches of the temporal are the only arteries indeed from whence blood, in ordinary practice, is ever taken; for although the opening of some other branches of arteries has by some been proposed, yet these are situated in such a manner that they either cannot be readily come at, or being in the neighbourhood of large nerves, the opening of them might be attended with bad consequences. In performing this operation on any of the temporal branches, if the artery lies superficial, it may be done with one push of the lancet, in the same manner as was directed for venesection; but when the artery lies deeply covered with cellular substance, it is always necessary to lay it fairly open to view, before making the orifice with the lancet; for in all the smaller arteries, when they are cut entirely across, there is little chance of being able to procure any considerable quantity of blood from them; as, when divided in this manner, they are sure to retract considerably within the surrounding parts, which commonly puts a stop to all further evacuation.

with some reason: but the practice is attended with inconvenience; and I apprehend, that opening the *jugular veins**

Some degree of nicety is also necessary in making the opening into the artery of a proper oblique direction, neither quite across nor directly longitudinal; for a longitudinal opening never bleeds so freely, either in an artery or in a vein, as when its direction is somewhat oblique.

If the opening has been properly made, and if the artery is of any tolerable size, it will at once discharge very freely without any compression; but when the evacuation does not go on so well as could be wished, the discharge may be always assisted by compressing the artery immediately above the orifice, between it and the corresponding veins. The quantity of blood being thus discharged, it will commonly happen, that a very slight compression on these smaller arteries will suffice for putting a stop to the evacuation; and whatever pressure is found necessary, may be here applied in the same manner as was directed in venesection.

It happens, however, in some instances, that this does not succeed, the orifice continuing to burst out from time to time, so as to be productive of much distress and inconvenience.

In this situation there are three different methods by which we may with tolerable certainty put a stop to the farther discharge of blood. 1st. If the artery is small, as all the branches of the temporal arteries commonly are, the cutting it entirely across, exactly at the orifice made with the lancet, by allowing it to retract within the surrounding parts, generally puts an immediate stop to the discharge. 2d. When that is not consented to, we have it always in our power to secure the bleeding vessel with a ligature, as we would do an artery accidentally divided in any part of the body. And, lastly, if neither of these methods is agreed to by the patient, we can, by means of a constant regular pressure, obliterate the cavity of the artery at the place where the operation has been performed.

* When the external jugular vein is to be opened, the surgeon generally makes the necessary pressure with his thumb. The orifice should

may prove more effectual; but, at the same time, it will be generally proper to draw blood from the *temples*, by *cupping* and *scarifying* *.

PURGING.

It is probable that *purging*, as it may operate by revulsion, may be of more use in this than in some other inflammatory affections †.

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be made in the direction of the fibres of the *platysma myoides muscle*; and the vein is not so apt to glide out of the way, when the surgeon makes the puncture just where it lies over a part of the sterno-cleido-mastoideus muscle.

* *Cupping* and *scarifying* the temples ought to be performed with extreme caution, because of the numerous ramifications of considerable branches of arteries in those places. *Cupping* should be employed betwixt the shoulders, if deemed necessary, the patient having fainted from general bleeding, not sufficient blood being abstracted. The course I have pursued has been bleeding in the arm, then cupping near the nape of the neck, and lastly, leeches to the temples.

† I have usually given a drastic purge, as inviting the blood from the head to the aorta descendens, as—

R. Tinct. Aloes c. dr. 2.
Jalapii pulv. scr. 1.
Tinct. Rhei, dr. 2.
Kali vitriolat. dr. 1.
Aq. Cinnam. dr. 2.
Aq. Rosæ, unc. 1.
Ft. Haust. statim sumend.

At the same time I have employed a common glyster, adding to it two drachms of vitriolated magnesia.

BATHING THE FEET. UPRIGHT POSITION.

For the same purpose of revulsion, *warm pediluvia* are a remedy; but at the same time somewhat ambiguous *. The taking off the force of the blood in the vessels of the head by an *erect posture*, is generally useful †.

SHAVING THE HEAD.

Shaving of the head is always proper and necessary for the admission of other remedies ‡.

BLISTERS.

Blistering is commonly useful in this disease, but chiefly when applied near to the part affected §.

COLD APPLICATIONS.

Even *cold substances*, applied close to the head, have been

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* When the system has been depleted, instead of the *pediluvium*, mustard *cataplasms* are found more beneficial, applied to the feet for an hour.

† He should also be kept very quiet, and as little done as possible to ruffle his mind.

‡ As the application of vinegar and æther; even pounded ice has been employed with advantage. A nightcap should be put on, to promote evaporation, and retain the moisture.

§ Blisters, when early put on the head, prevent the application of a cold medium, and draws the blood towards the head. After bleeding, these should be applied to the inside of the thighs and legs. When applied to the head, another should follow it after 24 hours. Stranguary must be avoided, by drinking plentifully of barley-water, in which some powder of gum arabic is put.

found safe and highly useful; and the application of such refrigerants as *vinegar*, is certainly proper.

OPIATES.

It appears to me certain, that *opiates* are hurtful in every inflammatory state of the brain; and it is to be observed, that from the ambiguity mentioned in the accounts of practitioners, with regard to this disease, are of very uncertain application*.

ANTIPHLOGISTIC REGIMEN.

Every part of the antiphlogistic regimen is here necessary, and particularly the admission of cold air.

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* After great evacuations, should the patient, as is often the case, be unable to obtain any sleep, and be remarkably restless, although opium by itself has done often more harm than good, three grains of Dover's powder (Pulv. Ipecac. comp.) may be given every three hours with advantage, which will often produce sleep, and also a profuse perspiration, which tends likewise to remove fever.

APOPLEXY.

APOPLEXIA & PARALYSIS *.

Apoplexy, in all its different degrees, most commonly affects persons advanced in life, and especially those above sixty years of age. It most usually affects persons of large heads and short necks, persons of a corpulent habit, persons who have passed an indolent life and used a full diet, and especially those who have indulged in frequent intoxication. Men who have long laboured under a frequent and copious discharge of blood from the hemorrhoidal vessels, upon either the suppression or spontaneous ceasing of that discharge, are particularly liable to be affected with apoplexy.

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* When *paralysis* is produced, or palsy of an arm, or one side, we usually say such a person has had a *paralytic stroke*, whereas in medical language, it is the result of *apoplexy*. When any one dies of this disease, it is usual to say, they died of a fit of *apoplexy*. An *apoplexy* then that does not kill, is what is in general language called a *paralytic stroke*. That they are the same disease, we may remark, that the *hemiplegia* usually begins with or follows a paroxysm of *apoplexy*; and when the *hemiplegia*, after subsisting for some time, becomes *fatal*, it is commonly by passing again into the state of *apoplexy*. The relation, therefore, or affinity between the two diseases, is sufficiently evident; and is further strongly confirmed by this, that the *hemiplegia* comes upon persons of the same constitution, and is preceded by the same symptoms that have been taken notice of with respect to *apoplexy*.

This disease frequently comes on very suddenly; but in many cases it is preceded by various symptoms, such as,

Frequent fits of giddiness.
Frequent head-aches.
Some transitory interruption of seeing and hearing.
False vision, and sometimes hearing.
A sense of numbness and tingling in the extremities.
Shedding of tears without a sufficient assignable cause.
Some faltering in the tongue.
Frequent drowsiness.
Loss of memory.
Faculties impaired.
Lowness of spirits.

An attention to these symptoms, and to the predisponent circumstances, will often enable us to foresee and hinder the more violent attacks of this disease.

When the disease comes on suddenly to a considerable degree, it has been frequently observed to have been immediately induced by violent exercise; by a full and long-continued inspiration; by a fit of anger; by much external heat, especially that arising from a crowded assembly of people; by warm bathing; by intoxication; by long stooping with the head down; and by a tight ligature about the neck. The disease has been remarked to make its attacks most frequently in the spring season, and especially when the vernal heat suddenly succeeds to the winter cold. In short, it is produced by whatever determines the blood to the head.

The fit itself is marked by the following symptoms:

1. There is a sudden privation of all the powers of sense and voluntary motion, often without any indication of its approach.
2. The patient falls down.
3. The mouth is usually drawn on one side.
4. The joints remain flexible, and
5. The muscles remain flaccid.
6. The person is seemingly in a profound sleep.
7. Often it is accompanied with stertor, or sonorous breathing, or loud snoring.

Dissections of subjects who die of this disease, for the most part, shew, that the brain has been oppressed, and this may be produced in different ways, as

1. By external violence fracturing and pressing in a part of the cranium.
2. By tumours, sometimes soft, sometimes bony, formed in different parts of the brain, or in its membranes, and becoming of such a bulk as to compress the medullary substance of the brain.
3. By the blood accumulated in the blood-vessels of the brain, and distending them to such a degree as to compress the medullary portion of the same.
4. By fluids effused in different parts of the brain, or into the cavity of the cranium, and accumulated in such quantity as to occasion the compression we treat of.

And, as to this last, it is to be remarked here, that the fluids effused may be of two kinds: that is, they may be either

a portion of the common mass of blood, poured out from red vessels; or a portion of serum or colourless fluid, poured out chiefly by exhalents.

This produces the distinction of two kinds in medical writings.

I. The *apoplexia sanguinea*,

1. Which is supposed to attack more suddenly than the *serosa*, being
2. Without much previous oppression,
3. Or unusual sleepiness.
4. The face appears red and flushed.
5. The veins turgid.
6. The eyes half open, but not transparent.
7. The respiration tolerably free,
8. Though accompanied with snoring, or rattling in the throat.
9. The pulse full and strong.

II. The *apoplexia serosa*

1. Is apt to be preceded by an unusual heaviness,
2. Giddiness, and
3. Drowsiness.

And after the stroke,

4. The face is not remarkably red nor flushed.
5. The veins are not turgid.
6. The respiration is more straitened,
7. And there is more of the rattling and snoring.
8. With a working of froth from the mouth.
9. The pulse is not strong, nor remarkably full, and inclines to intermit.

There have been instances where an apoplectic fit has

wrought itself off by an effort of nature; and where a profuse spitting, a bleeding at the nose, or a plentiful diarrhœa, have saved life: but, in general, the patients depend on art for their preservation.

If the patient can be brought to himself within the first four days, there may be hopes of a complete recovery, and we are to settle a proper scheme of conduct for the prevention of future attacks; but if there be no remarkable amendment within the time above-mentioned, there is but little hope of shaking off the disease, which will either destroy life immediately, or terminate in an incurable palsy, for the most part.

Palsy is a disease consisting in a loss of the power of voluntary motion, but affecting certain parts of the body only, and by this it is distinguished from apoplexy. One of the most frequent forms of palsy is, when it affects the whole of the muscles on one side of the body; and then the disease is named a *Hemiplegia*.

In the most violent degrees of palsy, the patient loses both the power of motion and sense of feeling, either of one side, or of the lower half of the body. The first case is termed *Hemiplegia* *, the latter *Paraplegia* †.

The most common species is the hemiplegia; and this is usually the consequence of an apoplectic stroke. It is not uncommon to see patients live for several years in the paralytic state, especially if it be the hemiplegia: and even in

* From ημιου, half, and πλεσσω, to strike.

† From παρα, across, and πλησσω, to strike.

the paraplegia, if death does not ensue within the first two or three weeks, it may not take place for a considerable time.

The hemiplegia usually begins with, or follows, a paroxysm of apoplexy; and when the hemiplegia, after subsisting for some time, becomes fatal, it is commonly by passing again into the state of apoplexy. The relation, therefore, or affinity between the two diseases, is sufficiently evident; and is further strongly confirmed by this, that the hemiplegia comes upon persons of the same constitution, and is preceded by the same symptoms that have been taken notice of with respect to apoplexy.

It is a promising circumstance in paralytic cases, when the patient feels a light degree of painful itchiness in the affected parts; and if a fever should arise, it bids fair to remove the palsy.

When the sense of feeling remains, there is much more room to hope for a perfect recovery, than in cases where the powers both of motion and sensation are lost.

METHODS OF PREVENTION.

From the great danger attending *this disease* when it has come on, it will readily appear, that our care should be chiefly directed to the *prevention* of it. This, I think, may be often done, by avoiding the remote and exciting causes; but it will also appear from what is said above, that the prevention of this disease will especially depend upon obviating the predisponent cause; which, in most cases, seems to be a *plethoric state* of the *blood-vessels of the brain*. This, I think,

may be obviated by different means; and, in the first place, by a proper management of *exercise* and *diet*.

EXERCISE.

The *exercise* ought to be such as may support the perspiration, without heating the body or hurrying respiration; and therefore commonly by some mode of gestation. In persons not liable to frequent fits of giddiness, and who are accustomed to riding on horseback, this exercise is of all others the best. *Walking*, and some other modes of bodily exercise, may be employed with the restrictions just now mentioned; but in old men, and in men of corpulent habits, *bodily exercise* ought always to be very moderate.

DIET.

In persons who pretty early in life show the predisposition to apoplexy, it is probable that a *low diet*, with a *good deal of exercise*, might entirely prevent the disease; but in persons who are advanced in life before they think of taking precautions, and are at the same time of a corpulent habit, which generally supposes their having been accustomed to *full living* *, it might not be safe at once to put them upon a low diet: and it may be enough that their diet be rendered *more moderate* than *usual*, especially with respect to *animal*

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* Persons of this full plethoric habit are usually remarkable for their full and often gross feeding. They should be warned in time; for as many die by over-eating, as over-drinking, they should observe thi rule, to eat but of one dish, and never to satiety.

food; and that *at supper* such food should be abstained from altogether.

LIQUORS TO BE AVOIDED.

In drinking, all heating liquors are to be abstained from, as much as *former habits* will allow; and the smallest approach to *intoxication* is to be carefully shunned. For ordinary draught, *small beer* is to be preferred to *plain water*, as the *latter* is more ready to occasion *costiveness*, which in apoplectic habits is to be carefully avoided.

LAXATIVES TO BE USED.

Evacuations by stool may certainly contribute to relieve the plethoric state of the vessels of the head; and upon an appearance of any unusual turgescence in these, *purging* will be very properly employed: but when no such turgescence appears, the frequent repetition of *large purging* might weaken the body too much; and for preventing apoplexy, it may for the most part be enough to keep the belly regular, and rather open, by *gentle laxatives*. In the summer season, it may be useful to drink every morning, of a gentle laxative mineral water, but never in large quantity.

OF BLOOD-LETTING.

In the case of a plethoric state of the system, it might be supposed that *blood-letting* would be the most effectual means of diminishing the plethora, and of preventing its consequences: and when an attack of apoplexy is immediately threatened, blood-letting is certainly the remedy to be depended upon; and blood should be taken largely, if it can

be done, from the *jugular vein* or *temporal artery*. But when no threatening turgescence appears, *the obviating plethora is not judiciously attempted by blood-letting*. In doubtful circumstances, *leeches* applied to the temples, or *scarifications* of the *hind-head*, may be more safe than *general bleedings*.

SETON, OR ISSUE.

When there are manifest symptoms of a plethoric state in the vessels of the head, a *seton*, or *pea-issue*, near the head, may be very useful in obviating any turgescence of the blood.

These are the means to be employed for preventing the apoplexy which might arise from a plethoric state of the vessels of the brain; and if, at the same time, great care is taken to avoid the exciting causes, these means will be generally successful.

THE CURE.

For the CURE of apoplexies from internal causes, and which I suppose to be chiefly those from compression, the usual violence and fatality of it require that the proper remedies be *immediately* and *largely employed*.

POSITION AND COOLNESS.

The patient is to be kept as much as possible in somewhat of an *erect posture*, and in *cool air*; and therefore neither in a *warm chamber*, nor *covered* with *bed-clothes*, nor *surrounded* with *a crowd of people*.

BLOOD-LETTING.

In all cases of a full habit, and where the disease has been

preceded by marks of a plethoric state, *blood-letting* is to be immediately employed, and very largely. In my opinion, it will be most effectual when the blood is taken from the *jugular vein*; but if that cannot be properly done, it may be taken from the arm. The opening of the *temporal artery*, when a large branch can be opened, so as suddenly to pour out a considerable quantity of blood, may also be an effectual remedy; but, in execution, it is more uncertain, and may be inconvenient. It may be in some measure supplied by *cupping* and *scarifying* on the temples or hind-head. This indeed, should seldom be omitted; and these *scarifications* are always preferable to the application of *leeches*.

A PARTICULAR OBSERVATION.

With respect to every mode of blood-letting, this is to be observed, that when, in any case of apoplexy, it can be perceived that one side of the body is more affected with the loss of motion than the other, the *blood-letting*, if possible, should be made on the side opposite to that most affected.

GLYSTERS AND PURGATIVES.

Another remedy to be employed is purging, to be immediately attempted by *acrid glysters*, and, at the same time, if any power of swallowing remain, by *drastic purgatives* given by the mouth. These, however, lest they may excite vomiting, should be given in *divided portions* at proper intervals.

VOMITING DANGEROUS.

Vomiting has been commended by some practitioners and

writers: but, apprehending that this might impel the blood with too much violence into the vessels of the head, I have never employed it.

BLISTERS.

Another remedy to be immediately employed is *blistering*, and I judge that this is more effectual when applied to the head, or near to it, than when it is applied to the lower extremities. This remedy I do not consider as a stimulant, or capable of making *any considerable revulsion;* but, applied to the head, I suppose it useful in taking off the *hæmorrhagic disposition* so often prevailing there.

STIMULANTS CONDEMNED.

It has been usual with practitioners, together with the remedies already mentioned, to employ *stimulants* of various kinds: but I am disposed to think them *generally hurtful;* and they must be so, wherever the fulness of the vessels, and the impetus of the blood in these, is to be diminished. Upon this principle it is therefore agreed, that *stimulants* are absolutely *improper* in what is supposed to be a *sanguine apoplexy;* but they are commonly supposed to be proper in the *serous.* If, however, we be right in alleging that this also commonly depends upon a *plethoric state* of the *blood-vessels of the brain, stimulants* must be equally improper in the one case as in the other.

CAUSES OF HEMIPLEGIA THE SAME AS APOPLEXY.

The compression occasioning *hemiplegia* may be of the same kind, and of all the different kinds that produce

apoplexy, and therefore either from 1. *tumour*, 2. *over-distention*, or 3. *effusion*. The existence of *tumour* giving compression, may often be better discerned in the case of palsy than in that of apoplexy, as its effects often appear at first in a very partial affection.

The other modes of compression, that is, of *over-distention* and *effusion*, may, and commonly do take place, in *hemiplegia*; and when they do, their operation here differs from that producing apoplexy, by *its effects being partial*, and on *one side of the body only*.

ONE SIDE OF THE BRAIN ONLY AFFECTED.

It may seem difficult to conceive that an *over-distention* can take place in the vessels *on one side of the brain only*; but it may be supposed: and in the case of a *palsy*, which is both partial and transitory, it is perhaps the only condition of the vessels of the brain that can take place. In a *hemiplegia*, indeed, which subsists for any length of time, there is probably always an *effusion*, either *sanguine* or *serous*: but it is likely that even the latter must be supported by a remaining congestion in the blood-vessels.

TREATMENT.

Doctor Cullen justly condemns, in the incipient stage, the application of *stimulants*, and fears that much mischief has been done from this cause; but recommends the employment of *cathartic medicines**; in the latter stages, they

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* The best kind is that which stimulates the rectum, and invites the blood to the *aorta descendens*, as—

are of doubtful efficacy, and often ruin the constitution *.

EXERCISE COMMENDED.

In a hemiplegia, bodily exercise cannot be employed; and in a more limited affection, if depending upon a compression of some part of the brain, it would be an ambiguous remedy: but, in all cases where the exercise of *gestation* can be employed, it is proper; as, even in cases of compression, the stimulus of such exercise when moderate, is safe †; and, as it always determines to the surface of the

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R. Tinct. Aloes comp. dr. 2.
Magnes. Vitriolat. scr. 1.
Aq. Cinnam.
Aq. Menth. pip aa. dr. 5.
Ft. Haust. 3tâ quâque horâ sumend. donec alvus sit satis soluta.

Emetics are dangerous under such circumstances. *Mustard cataplasms* to the feet should by all means be applied, and a blister to the nape of the neck, and blisters to the thighs. The legs and arms should be well rubbed, and repeatedly, with the following liniment:

R. Lin. Sapon c. unc. 1 ss.
Tinct. Cantharid. dr. 4.
Ft. Lin.

This should be continued three or four times in the twelve hours, or if not at hand, employ mustard.

* Trying to do too much has destroyed thousands. Adrian had put on his tombstone—"I have died by the multitude of advisers." If any thing be done, let it be to keep up *hope*, and gently. All narcotic poisons have been found to have done harm.

† Jolting over the stones would be wrong, also any attempt at riding, and the jaunt should be more for air than exercise.

body, it is a remedy to be employed in all cases of internal congestion.

FRICTIONS.

Rubbing the paralytic parts with the hand, or defended by an hare's skin, or with a rubbing-brush contrived on purpose, or flannel, is supposed, and has done, some good. These should be employed frequently, especially before going to bed: other stimulant applications have also done good *. Contriving of mechanical motions have also been found of essential service †.

CAUTION AGAINST THE WARM-BATH.

The cold-bath is inadmissible: the warm-bath, by stimulating the solids, proves a strong stimulus to the sanguiferous system, it is therefore an ambiguous remedy; and has frequently been manifestly hurtful in palsies depending upon a congestion of blood in the vessels of the brain.

OPIUM.

Opium, as acting like wine given in a large quantity, which produces, in health, a kind of *palsy*, cannot, on any

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* As the Lin. Sapon comp.—the Liniment. camp. comp.—Ol e camphor.—the Liniment mentioned in last note; also

R. Lin. Sapon ē, unc. 1 ss.
Pulv. Sem. Sinap ♦
Spir. Vin. Camphor, dr. aa dr. 2.
Ft. Lin.

† Vide Pugh on Muscular Motion. A common rolling-pin may be rubbed backwards and forwards on a table.

account, be admitted, and has often done manifest harm, as also all narcotic poisons.

BARK AND STEEL.

This I have never known of any other service than as keeping up the strength of the constitution.

PURGATIVES.

The best purgative is that of aloes *, which seldom produces any liquid motion. Time, however, with prudence, is the only cure in this terrible disease; we would recommend therefore here in strong terms,

PREVENTION.

Old persons are most subject to this disease; and where there is a natural fulness of the habit, cupping must be occasionally employed, with abstemious diet. Should there be felt a numbness at the ends of the fingers or toes, continuing, with occasional pricking sensations, a bursting out into a flood of tears without sufficient cause, then there is fear of the approach of this disease, and depletion must be had recourse to, also keeping up afterwards the vigour of the constitution. Frictions of the lower extremities, or stimulant embrocations, should also be employed, and the quick application for medical advice, should any fit occur.

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* R. Aloes Socot. gr. 10.
Fer. Vitriolat. gr. 5.
Extr. Cinchon. gr. 10.
Ft. Pil. 10.

A pill is to be taken at bed-time, and, if necessary, early the following morning, and increased, if required.

MANIA.

MADNESS.

Of all the diseases incident to the human frame, this is the most terrible.

SYMPTOMS.

What for the most part especially distinguishes the disease is, a hurry of mind, in pursuing any thing like a train of thought, and in running from one train of thought to another. Maniacal persons are, in general, very irascible: but what more particularly produces their angry emotions is, that their false judgments leading to some action which is always pushed with impetuosity and violence; when this is interrupted or restrained, they break out into violent anger and furious violence against every person near them, and upon every thing that stands in the way of their impetuous will. The false judgment often turns upon a mistaken opinion of some injury supposed to have been formerly received, or now supposed to be intended: and it is remarkable, that such an opinion is often with respect to their former dearest friends and relations; and therefore their resentment and anger is particularly directed towards these. And although this should not be the case, they commonly soon lose that

respect and regard which they formerly had for their friends and relations. With all these circumstances, it will be readily perceived, that the disease must be attended very constantly with that incoherent and absurd speech we call raving. Further, with the circumstances mentioned, there is commonly joined an unusual force in all the voluntary motions; and an insensibility or resistance of the force of all impressions, and particularly a resistance of the powers of sleep, of cold, and even of hunger; though, indeed, in many instances, a voracious appetite takes place.

PROXIMATE CAUSE.

It appears to me, that the whole of these circumstances and symptoms point out a considerable and unusual excess in the *excitement of the brain*, especially with respect to the animal functions; and it appears at the same time to be manifestly in some measure unequal, as it very often takes place with respect to these functions alone, while, at the same time, the vital and natural are commonly very little changed from their ordinary healthy state.

REMOTE CAUSES. PASSIONS OF THE MIND.

The effects of violent emotions or passions of the mind have more frequently occurred as the remote causes of mania; and it is sufficiently probable that such violent emotions, as they do often immediately produce a temporary increase of excitement, so they may, upon some occasions of their permanent inherence or frequent repetition, produce a more considerable and more permanent excitement, that is, a mania.

RESTRAINT NECESSARY.

Restraining the anger and violence of madmen is always necessary for preventing their hurting themselves or others; but this restraint is also to be considered as a remedy. *Angry passions* are always rendered more violent by the indulgence of the impetuous motions they produce; and even in madmen the feeling of restraint will sometimes prevent the efforts which their passion would otherwise occasion. *Restraint*, therefore, is useful, and ought to be complete; but it should be executed in the easiest manner possible for the patient, and the *strait waistcoat* answers every purpose better than any other that has yet been thought of. The restraining madmen by the force of other men, as occasioning a constant struggle and violent agitation, is often hurtful.* Although, on many occasions, it may not be safe to allow maniacs to be upon their legs, or to walk about, it is never desirable to confine them to a horizontal situation; and whenever it can be admitted, they should be more or less in an erect posture. Although there may be no symptoms of any preternatural fulness, or increased impetus of blood in the vessels of the brain, a horizontal posture always increases the fulness and tension of these vessels, and may thereby increase the excitement of the brain.

NECESSITY OF MAD-HOUSES.

The restraint mentioned requires confinement within doors, and it should be in a place which presents as few ob-

* Let this be carefully attended to.

jects of sight and hearing as possible; and particularly, it should be removed from the objects that the patient was formerly acquainted with, as these would more readily call up ideas, and their various associations. It is for this reason that the confinement of madmen should hardly ever be in their usual habitation; or if they are, that their apartment should be stripped of all its former furniture. It is also for the most part proper, that maniacs should be without the company of any of their former acquaintance; the appearance of whom commonly excites emotions that increase the disease. Strangers may at first be offensive; but in a little time they come to be objects either of indifference or of fear, and they should not be frequently changed.

FEAR TO BE EXCITED.

Fear being a passion that diminishes excitement, may therefore be opposed to the excess of it; and particularly to the angry and irascible excitement of maniacs. These being more susceptible of fear than might be expected, it appears to me to have been commonly useful. In most cases, it has appeared to me necessary to employ a very constant impression of fear; and, therefore, to inspire them with the awe and dread of some particular persons, especially of those who are to be constantly near them. This awe and dread is, therefore, by one means or other, to be acquired; in the first place, by their being the authors of all the restraints that may be occasionally proper; but *sometimes it may be necessary to acquire it even by stripes and blows.* The former, although having the appearance of more severity, are much safer than strokes or blows about the head.

Neither of them, however, should be employed further than seems very necessary, and should be trusted only to those whose discretion can be depended upon. There is one case in which they are superfluous; that is, when the maniacal rage is either not susceptible of fear, or incapable of remembering the objects of it; for, in such instances, stripes and blows would be *wanton barbarity.** In many cases of a moderate disease, it is of advantage that the persons who are the authors of restraint and punishment, should be upon other occasions the bestowers of every indulgence and gratification that is admissible; never, however, neglecting to employ their awe when their indulgence shall have led to any abuse.

BLOOD-LETTING USEFUL AT FIRST. CAUTION.

Blood-letting, in all recent cases of mania, has been commonly practised, and I think with advantage; but when the disease has subsisted for some time, I have seldom found blood-letting of service. In those instances in which there is any frequency or fulness of pulse, or any marks of an increased impetus of the blood in the vessels of the head, blood-letting is a proper, and even a necessary remedy. Some practitioners, in such cases, have preferred a particular manner of blood-letting, recommending arteriotomy,

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* Were mad-houses properly inspected, great good would be accomplished. At present, several of them equal the *worst inquisitions*, which have ever disgraced Spain. Irons are seen in every part, and the *barbarity* exercised on these poor wretches, makes one's blood thrill with horror. Even our public charities are not exempted from this disgrace.—*Vide Report of the House of Commons respecting Mad-houses.*

scarifying the hind-head, or opening the jugular vein; and where any fulness or inflammatory disposition in the vessels of the brain is to be suspected, the opening of the vessels nearest to them is likely to be of the greatest service. The opening, however, of either the temporal artery or the jugular vein in maniacal persons, is very often *inconvenient*;* and it may generally be sufficient to open a vein in the arm, while the body is kept in somewhat of an erect posture, and such a quantity of blood drawn, as nearly brings on a *deliquium animi*, which is always a pretty certain mark of some diminution of the fulness and tension of the vessels of the brain.

PURGING.

For the same purpose of taking off the fulness and tension of these vessels of the brain, purging may be employed; and I can in no other view understand the celebrated use of *hellebore* among the ancients. I cannot, however, suppose any *specific power* in hellebore; and can by no means find that, at least the black hellebore, so efficacious with us as it is said to have been at Anticyra. As costiveness, however, is commonly a very constant and hurtful attendant of mania, purgatives come to be sometimes very necessary; and I have known some benefit obtained from the frequent use of pretty *drastic purgatives*. In this, however, I have been frequently disappointed; and I have found more advantage

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* After bleeding, *cupping* has been found of service, where this could be employed, after bleeding.

from the frequent use of cooling purgatives, particularly the *soluble tartar*, than from more drastic medicines.

VOMITING.

Vomiting has also been frequently employed in mania; and by determining powerfully to the surface of the body, it may possibly diminish the fulness and tension of the vessels, and thereby the excitement of the brain; but I have never carried the use of this remedy so far as might enable me to judge properly of its effects. Whether it may do harm by impelling the blood too forcibly into the vessels of the brain, or whether, by its general agitation of the whole system, it may remove that inequality of excitement which prevails in mania, I have not had experience enough to determine.*

SHAVING THE HEAD, AND BLISTERING.

Frequent *shaving of the head* has been found of service in mania, and by promoting perspiration, it probably takes off from the excitement of the internal parts. This, however, it is likely, may be more effectually done by *blistering*,† which

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* In general, mad people require large doses of an emetic before it can be brought to operate. It is the mind that produces vomiting more, perhaps, than the drug. Thus Ray mentions, that going into a ditch to herborise, he fell upon a dead dog; he was instantly sick, and never passed the same place without feeling the same inclination. In one case, I had to give near a hundred grains of ipecacuanha, and ten grains of tartarized antimony, before vomiting could be induced. This remedy does not apply to *Mania*, strictly speaking, but rather to *Melancholia*.

† Dr. Monro, in his Observations on Mania, mentions that a blister, when applied to the head itself, seldom proves useful; and the same

more certainly takes off the excitement of subjacent parts. In recent cases, it has been found useful by inducing sleep; and when it has that effect, the repetition of it may be proper: but, in maniacal cases that have lasted for some time, blistering has not appeared to me to be of any service; and in such cases also, I have not found perpetual blisters, or any other form of issue, prove useful.

THE COLD-BATH.

As heat is the principal means of first exciting the nervous system, and establishing the nervous power and vital principle in animals; so, in cases of preternatural excitement, the application of cold might be supposed a proper remedy: but there are many instances of maniacs who have been exposed, for a great length of time, to a considerable degree of cold, without having their symptoms any-wise relieved. This may render, in general, the application of cold a doubtful remedy; but it is at the same time certain, that maniacs have often been relieved, and sometimes entirely cured, by the use of cold bathing, especially when administered in a certain manner. This seems to consist, in throwing the madman into the cold water by surprise; by detaining him in it for some length of time; and pouring water frequently upon the head, while the whole of the body, except the head,

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circumstance has been noticed by other physicians. When we have recourse to blisters, it will be most advisable, therefore, to apply them to the neck, back, or legs. To keep up a sufficient discharge from them, I have found the unguentum sabinæ far preferable to the unguentum cyttæ.—Vide Thomas's Practice of Physic.

is immersed in the water; and thus managing the whole process, so as that, with the assistance of some fear, a refrigerant effect may be produced. This, I can affirm, has been often useful; and that the external application of cold may be of service, we know farther, from the benefit which has been received in some maniacal cases, from the application of *ice* and *snow* to *the naked head*, and from the application of the noted *Clay-Cap*.*

THE WARM-BATH CONSIDERED.

Warm bathing also has been recommended by some practical writers, and in some rigid melancholic habits, it may possibly be useful, or as employed in the manner prescribed by some, of immersing *the lower parts of the body in warm water*, while *cold water is poured upon the head and upper parts*.† Of this practice, however, I have had no experience; and, in the common manner of employing warm bathing, I have found it rather hurtful to maniacs.

OPIUM.

According to my supposition, that the disease depends upon an increased excitement of the brain, especially with respect to the animal functions, *opium*, so commonly powerful in inducing sleep, or a considerable collapse as to these functions, should be a powerful remedy of mania. That it has truly proved such, I believe from the testimony of

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* There are upon record several instances of cure by the application of a clay-cap to the head.

† Vide Dr. Thornton's Improvement, page 340.

Bernard Huet, whose practice is narrated at the end of Wepferi Historia Apoplecticorum. I leave to my readers to study this in the work I have referred to, where every part of the practice is fully, and, as it appears to me, very judiciously delivered. I have never, indeed, carried the trial so far as seems to be requisite to an entire cure: but I have frequently employed in some maniacal cases, large doses of *opium*;* and when they had the effect of inducing sleep, it was manifestly with advantage. At the same time, in some cases, from doubts, whether the disease might not depend upon some organic lesions of the brain, when the opium would be superfluous; and, in other cases, from

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* Where total want of sleep prevails, the dose of laudanum must be large, and repeated, even to an hundred drops or more. A new method of inducing it has also been discovered. Dr. Cox speaks highly of *swinging* as a remedy in mania, and he recites many cases where the happiest effects were derived from making use of it. We are told by him, that it may be employed in the common *oscillatory way*, or in a *circular manner of whirl*; the patient at the same time sitting erect, or lying horizontally. On persons in health, he observed these swings to produce only the common effects; but in proportion to the motion communicated, and sooner by the *circular* than by the *oscillatory*, and in the horizontal than in the perpendicular position. In some *maniacal* cases, independent of these more obvious effects, he noticed, that swinging often repeated, had the singular property of rendering the system sensible to the action of agents, whose powers it before resisted. One of its most valuable properties was, its proving a mechanical *anodyne*. After a very few circumvolutions, Dr. Cox has witnessed its soothing, lulling effects: the mind has become tranquillized, and the body quiescent; a degree of vertigo has often followed, and this has been followed by a most refreshing sleep. *This I have also experienced.*—Doctor Thomas.

doubts, whether there might not be some inflammatory affection joined with the mania, when the opium would be hurtful; I have never pushed this remedy to the extent that might be necessary to make an entire cure.

CAMPHOR, A DOUBTFUL REMEDY.

Camphor has been recommended as a remedy of mania, and there are instances alleged of its having performed an entire cure. As it appears from the experiments of Beccaria, that this substance is possessed of a sedative and narcotic virtue, these cures are not altogether improbable; but, in several trials, and even in large doses, I have found no benefit from it; and, excepting those in the Philosophical Transactions, No. 400, I have hardly met with any other testimonies in its favour.

LABOUR.

I have been informed, that some maniacs have been cured by being compelled to constant, and even hard labour; and as a forced attention to the conduct of any bodily exercise, is a very certain means of diverting the mind from pursuing any train of thought, it is highly probable that such exercise may be useful in many cases of mania.*

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* Monsieur Pinel, in his Treatise on Insanity, tells us, that at the principal hospitals in Spain, the maniacs capable of working, are distributed every morning into separate parties. An overlooker is appointed for each class, who apportions to them all, individually, their respective employments, directs their exertions, and watches over their conduct. The whole day is thus occupied in salutary and refreshing exercises, which are interrupted only by short intervals of rest and re-

TRAVELLING.

I must conclude this subject with observing, that, even in several cases of complete mania, I have known a cure take place in the course of a journey carried on for some length of time.*

THE TWO TEMPERAMENTS.

These are the remedies which have been chiefly employed in the mania that has been above described, and I believe they have been employed promiscuously, without supposing that the mania was to be distinguished into different species. Indeed, I am not ready to say how far it is to be so distinguished, but I shall offer one observation, which may possibly merit attention. It appears to me, that there are two different cases of mania that are especially different, according to the original temperament of the persons whom the disease affects. It perhaps occurs most frequently in persons of a *melancholic* or *atrabilarian* temperament; but it certainly does also often occur in persons of that very opposite temperament which physicians have named the *Sanguine*. According as the disease happens to occur in persons of the one or other of these temperaments, I apprehend it

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laxation. The fatigues of the day prepare the labourers for sleep and repose during the night. Hence it happens, that those whose condition does not place them above the necessity of submission to toil and labour, are almost always cured; whilst the grandee, who would think himself degraded by exercises of this description, is generally incurable.—THOMAS.

* This plan in melancholia I have often found successful.

may be considered as of a different nature; and I believe, that accurate observation, employed upon a sufficient number of cases, would discern some pretty constant difference, either of the symptoms, or at least of the state of symptoms, in the two cases. I imagine that false imaginations, particular aversions, and resentments, are more fixed and steady in the melancholic than in the sanguine; and that somewhat inflammatory is more commonly joined with mania in the sanguine than in the melancholic. If such difference, however, does truly take place, it will be obvious that it may be proper to make some difference also in the practice. I am of opinion, that in the mania of *sanguine persons*, bloodletting, and other antiphlogistic measures, are more proper, and have been more useful than in the melancholic. I have only to add this other observation, that maniacs of the sanguine temperament recover more frequently and more entirely than those of the melancholic.

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN.

DR. LOCKER's PRACTICE.

VINEGAR.

Camphor has often been highly commended;* but, if we can believe Dr. Locker of Vienna, not very deservedly. Having found very good effects from a solution of this medicine in vinegar, he took it for granted that all the success was owing to the camphor; therefore, in order to give it a fair trial, he selected seven patients, and gave it in large doses of half a drachm twice a-day. This was continued for two months, and the doctor was surprised to find that only one of his patients received any benefit. He then returned the other six back to the camphorated julap made with vinegar, and in a few weeks four of them recovered the use of their reason. This inclined him to think that the virtue depended solely on the vinegar, and accordingly he began to make the trial. Common vinegar was first given: but after a little while he fixed on that which had been distilled, and gave about an ounce and a half of it every day; the patients having been previously prepared by bleeding and purging, which was repeated according as it was found necessary. He gives a list of eight patients who were cured by this method; some in six weeks, others in two months, and none of them took up more

* Vide page 335 of this work, respecting Camphor.

than three months in perfecting the cure. He does not indeed give the ages of the patients, nor mention the circumstances of the case; he only mentions the day on which the use of the vinegar was begun, and the day on which they were discharged; and he adds, that they all continued well at the time of his writing.

Dr. Locker informs us, that this medicine acts chiefly as a sudorific; and he observed, that the more the patients sweated, the sooner they were cured: it was also found to promote the menstrual discharge in such as had been obstructed, or had too little of this salutary evacuation.

DOCTOR THORNTON'S PRACTICE.

COLD APPLICATIONS TO THE HEAD AND HOT TO THE FEET.

Having had much experience in mania, I have found it of great consequence conquering my patient, which is done not by force but by means of the eye. I have attended where five men were employed to hold a maniacal patient; and when I arrived, having ordered them to let him go, I have conquered him at once by fixing my eye on his, and speaking in a loud, bold, magisterial tone of voice. When his eye has ceased to look on me, I have ordered him to look steadfastly upon me; and in this manner have I ordered patients to hold out their arms to be bled, when otherwise this could not be accomplished. Having premised bleeding, and a cathartic of jalap and calomel, with the addition of compound tincture of aloes, the head being shaved, I have employed cloths dipt in vinegar, and æther to the scalp, the legs as high as possible being immersed in hot water; and this derivation from the head ordered to be continued for some time. When this could not be done in an horizontal position, I have ordered the same plan to be pursued by means of fomentations. It is requisite to have the patient all this time confined by means of a strait waistcoat, for he is apt to be very violent upon the application of cold to the head. From neglect of this precaution, one of my patients rose up, and suddenly seized the poker: the attendants all fled. Escape to me was impossible. As he came up towards me, I spoke in a bold decided manner, "Mr. W——, lay down that poker *immediately*," and walked up towards him, fixing my eye on

his, when he directly obeyed, and all was quiet again. In this manner and by other applications, this man speedily recovered; and in several others an effectual cure has been performed.

DR. CURRIE'S PRACTICE.

DIGITALIS.

The sedative effects of the digitalis point it out, we have reason to presume, as an useful and powerful remedy after frequent purging and phlebotomy in cases where great excitement and increased tone prevail in the nervous and arterial systems. It has therefore been used in mania, and not unfrequently with success. When the derangement is accompanied, and in some degree regulated, by an accelerated circulation, a use of *foxglove* will be highly proper. Twenty drops of the tincture, or half a grain of the powder, are to be given at first, and the dose to be gradually increased till the desired effect is produced. To make this permanent, it will however be necessary to keep the constitution for some length of time under the influence of the medicine.*

DOCTOR THORNTON'S INVENTION.

A REMARKABLE CASE.

The real or nominal wife of Mr. J——, of Berner's Street, whom I had attended, at different periods, for the course of ten years, was seized with symptoms of *mania*. Her favourite canary birds and rabbits she killed herself, and put them into a pie for the dinner of Mr. J. Towards evening, violent mania arose, and she concealed in the bed a large carving knife to destroy herself and Mr. J. This is a very remarkable circumstance, that mad persons always wish the destruction of those they love most. I removed her from her own home; but such

† Vide Memoirs of the Medical Society of London, or Thomas's Practice of Physic.

was her violence, that no one would keep her in a private house. At last I obtained such a situation. The usual remedies were employed, and I had the satisfaction to find her amendment to be great; but when convalescent, every night she was strapt down in the bed, and being constrained in one position, to escape the *ennui* of such confinement, she would exert her body and voice, and the night was usually past restless. To avoid this, I hired another nurse; but even with two nurses, the poor lady was every night still with a strait-waistcoat on, and strapped down to the bed. After a considerable attendance with Dr. Simmons, in consultation once a week, who is Physician to the King, and accumulated by this practice alone £100,000, finding my patient got better and worse, and so alternated, I invented an iron, I will not call it cage, but *safe-guard*, which affixed to the bed, and gave all the latitude required by the patient, without risk or danger to the nurses. This was first communicated to Mr. J——, who highly approved of the plan, as did Dr. Simmons, and desired me to order it, and superintend the execution of it. The result was, the first night of the application she slept the whole night, and mended from that moment. Dr. Simmons was highly delighted with it, and said, that this plan ought to be adopted in every receptacle of maniacs. It is protected by leather; and when we consider that every night hundreds are placed in restraint, so that they cannot turn with ease, or scratch any part of the body; and nature scarcely obtains her relief in such restraint, and that it is a disease of the mind, such an improvement deserves every encouragement. Mr. Binion, ironmonger, of Edward Street, made it.

The necessity of such contrivance may be learnt from the following fact. I was attending a patient, with Dr. Simmons, near Mile End: his wife, mother, and sister, sat up. In the dead of night, when they imagined him asleep, they themselves yielded to the wants of nature: he very cunningly was pretending sleep, and catching this opportunity, he jumped out of bed, and seized a knife, and inflicted on himself thirteen wounds. This iron *safe-guard*, had it been then used, would have prevented all this danger.

INFLAMMATION OF THE LUNGS,

AND

PLEURISY.

PNEUMONIA.

PLEURITES.

PNEUMONIA AND PLEURISY NOT TO BE DISTINGUISHED.

Under this title I mean to comprehend the whole of the inflammations affecting either the viscera of the thorax, or the membrane lining the interior surface of that cavity: for neither do our diagnostics serve to ascertain exactly the seat of the disease;* nor does the difference in the seat of the disease exhibit any considerable variation in the state of the symptoms, nor lead to any difference in the method of cure.

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* In pleurites, or pleurisy, there is an acute pain in the side near the sixth or seventh rib, and the breathing is more painful than in pneumonia, or inflammation of the substance of the lungs, which is distinguished more by a pain under the sternum. Vide, however, Cullen's observations, p. 347, who will not allow this distinction.

SYMPTOMS.

Pneumonic inflammation, however various in its seat, seems to me to be always known and distinguished by the following symptoms; 1. pyrexia, 2. difficult breathing, 3. cough, and 4. pain in some part of the thorax. But these symptoms are, on different occasions, variously modified.

FULLER ACCOUNT OF SYMPTOMS—PYREXIA.

The disease almost always comes on with a cold stage, and is accompanied with the other symptoms of pyrexia; though, in a few instances, the pulse may not be more frequent, nor the heat of the body increased beyond what is natural. Sometimes the pyrexia is from the beginning accompanied with the other symptoms; but frequently it is formed for some hours before the other symptoms become considerable, and particularly before the pain be felt. For the most part, the pulse is frequent,* full, strong, hard, and quick;† but, in a few instances, especially in the advanced state of the disease, the pulse is weak and soft, and at the same time irregular.

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* A frequent pulse is when there is a great number of strokes in a given time.

† A quick pulse is when the stroke itself is quick, although the number in a given time be not very great.

It is therefore no tautology to mention both *frequent* and *quick*, as they are really distinct, and may be both present at once; but, if the pulse be above an hundred in a minute, the physician must have a very nice sense of feeling to distinguish between a quick and a slow beat.

BREATHING.

The difficulty of breathing is always present, and most considerable in inspiration; both because the lungs do not easily admit of a full dilatation, and because the dilatation aggravates the pain attending the disease. The difficulty of breathing is also greater when the patient is in one posture of his body rather than another. It is generally greater when he lies upon the side affected; but sometimes the contrary happens. Very often the patient cannot lie easy upon either side, finding ease only when lying on his back; and sometimes he cannot breathe easily, except when in somewhat of an erect posture.

COUGH.

A cough always attends this disease; but, in different cases, is more or less urgent and painful. It is sometimes dry, that is, without any expectoration, especially in the beginning of the disease; but more commonly it is, even from the first, moist, and the matter spit up various, both in consistence and colour, and frequently it is streaked with blood.*

PAIN.

The pain attending this disease is, in different cases, felt in different parts of the thorax, but most frequently in one

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* Young practitioners should not be alarmed at this symptom; nor should they suppose it a dangerous one: it is, on the contrary, a salutary symptom, and ought not to be restrained, either by too rigorous an adherence to the antiphlogistic regimen, or by the use of styptics and other astringents.

side. It has been said to affect the right side more frequently than the left; but this is not certain; while, on the other hand, it is certain that the left side has been very often affected. The pain is felt sometimes as if it were under the sternum; sometimes in the back between the shoulders; and, when in the sides, its place has been higher or lower, more forward or backward: but the place of all others most frequently affected is about the sixth or seventh rib, near the middle of its length, or a little more forward. The pain is often severe and pungent; but sometimes more dull and obtuse, with a sense of weight rather than of pain. It is most especially severe and pungent when occupying the place last mentioned. For the most part, it continues fixed in one place; but sometimes shoots from the side to the scapula on one hand, or to the sternum and clavicle on the other.

SEAT OF THE DISEASE.

The varying state of symptoms now mentioned does not always ascertain precisely the seat of the disease. To me it seems probable that the disease is always seated, or at least begins, in some part of the pleura; taking that membrane in its greatest extent, as now commonly understood; that is, as covering not only the internal surface of the cavity of the thorax, but also as forming the mediastinum, and as extended over the pericardium, and over the whole surface of the lungs.

PLEURISY.

There is, therefore, little foundation for distinguishing this disease by different appellations taken from the part which

may be supposed to be chiefly affected. The term Pleurisy might with propriety be applied to every case of the disease; and has been very improperly limited to that inflammation which begins, and chiefly affects, the *pieura costalis*. I have no doubt that such a case does truly occur: but, at the same time, I apprehend it to be a *rare occurrence*;* and that the disease much more frequently begins in, and chiefly affects, the pleura investing the lungs, producing all the symptoms before enumerated.

PERIPNEUMONY.

Some physicians have imagined, that there is a case of pneumonic inflammation particularly entitled to the appellation of *Peripneumony;* and that is, the case of an inflammation beginning in the parenchyma, or cellular texture of the lungs, and having its seat chiefly there. But it seems to me very doubtful, if any acute inflammation of the lungs, or any disease which has been called Peripneumony, be of that kind. It seems probable, that every acute inflammation begins in membranous parts; and, in every dissection of persons dead of peripneumony, the external membrane of the lungs, or some part of the pleura, has appeared to have been considerably affected.

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* When persons have stitches in the side, it may then be a slight pleuritic affection. We seldom open a body without finding *adhesions* from such inflammation; and severe colds are often attended with such *pleuritic* attacks, which we do wrong to call pneumonia.

A DISEASE MOSTLY UNIVERSAL.

With respect to the seat of pneumonic inflammation, I must observe further, that, although it may arise and subsist chiefly in one part of the pleura only, it is however frequently communicated to other parts of the same, and commonly communicates a morbid affection through its whole extent.

REMOTE CAUSES.

The remote cause of pneumonic inflammation is, commonly, cold applied to the body, obstructing perspiration, and determining to the lungs; while, at the same time, the lungs themselves are exposed to the action of cold. These circumstances operate especially when an inflammatory diathesis prevails in the system; and, consequently, upon persons of the greatest vigour; in cold climates; in the winter season; and particularly in the spring, when vicissitudes of heat and cold are frequent. The disease, however, may arise in any season when such vicissitudes occur.*

PROGNOSTICS.

The prognostics in this disease are formed from observing the state of the principal symptoms.

A violent pyrexia is always dangerous.

The danger, however, is chiefly denoted by the difficulty of breathing. When the patient can lie on one side only;

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* Vide Origin of Colds, p. 363.

when he can lie on neither side, but upon his back only; when he cannot breathe with tolerable ease, except the trunk of his body be erect; when, even in this posture, the breathing is very difficult, and attended with a turgescence and flushing of the face, together with partial sweats about the head and neck, and an irregular pulse; these circumstances mark the difficulty of breathing in progressive degrees, and consequently, in proportion, the danger of the disease.

A frequent violent cough aggravating the pain is always the symptom of an obstinate disease.

As I apprehend that the disease is hardly ever resolved, without some expectoration, so a dry cough must be always an unfavourable symptom.

As the expectoration formerly described marks that the disease is proceeding to a resolution; so an expectoration which has not the conditions there mentioned, must denote at least a doubtful state of the disease; but the marks taken from the colour of the matter are for the most part fallacious.

An acute pain, very much interrupting inspiration, is always the mark of a violent disease; though not of one more dangerous than an obtuse pain, attended with very difficult respiration.

When the pains, which at first had affected one side only, have afterwards spread into the other; or when, leaving the side first affected, they entirely pass into the other, these are always marks of an increasing, and therefore of a dangerous disease.

A delirium coming on during a pneumonic inflammation, is constantly a symptom denoting much danger.

When the termination of this disease proves fatal, it is on one or other of the days of the first week, from the third to the seventh. This is the most common case; but, in a few instances, death has happened at a later period of the disease.

When the disease is violent, but admitting of resolution, this also happens frequently in the course of the first week; but, in a more moderate state of the disease, the resolution is often delayed to the second week.

The disease, on some of the days from the third to the seventh, generally suffers a remission; which, however, may be often fallacious, as the disease does sometimes return again with as much violence as before, and then with great danger.

Sometimes the disease disappears on the second or third day, while an erysipelas makes its appearance on some external part; and, if this continue fixed, the pneumonic inflammation does not recur.

Pneumonia, like other inflammations, often ends in suppuration or gangrene.*

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* As this termination of Pneumonia is always fatal, it is highly necessary that the physician should be able to know when a gangrene is to be suspected, that he may take the proper means for preventing it; or, when it is absolutely formed, that he may save his reputation, by informing the patient's relations of the impending danger, and the fatal consequences with which such a termination is attended: I shall therefore add some of the more remarkable diagnostics of an incipient gangrene in this disease.

A purulent spitting, streaked with deep coloured blood, or with

THE CURE.

The cure of pneumonic inflammation must proceed upon the general plan, as explained in the case of inflammatory fever;* but the importance of the part affected, and the danger to which it is exposed, require that the remedies be *fully*, as well as *early*, employed.

BLEEDINGS TO BE REPEATED.

The remedy chiefly to be depended upon, is that of *bleeding* at the arm; which will be performed with most advantage in the arm of the side affected, but may be done in either arm, as may be most convenient for the patient or the surgeon. The quantity drawn must be suited to the violence of the disease, and to the vigour of the patient; and generally ought to be as large as this last circumstance will

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a blackish matter; a fetid breath; a rattling in the throat; a dejected countenance; a dim eye; a languid quick pulse; the blood drawn from a vein void of the inflammatory crust; fetid green stools in abundance; urine of a bright flame colour, or depositing a black sediment of a scaly appearance.

More symptoms of this fatal termination are unnecessary; for, if most of those above mentioned be present, the physician has no other duty to perform than warn the friends of the patient that death may be soon expected.

It may be further remarked, that, when a gangrene is begun, the patient is considerably freed from pain, and both himself and his attendants have great hopes of his recovering; a few hours, however, soon undeceives them, and raises the reputation of the physician, who has pronounced a true prognosis.

* Vide page 8 of this work.

allow. The remission of pain, and the relief of respiration, during the flowing of the blood, may limit the quantity to be then drawn; but, if these symptoms of relief do not appear, the bleeding should be continued till the symptoms of a beginning syncope come on. It is seldom that *one bleeding, however large*, will prove a cure of this disease; and, although the pain and difficulty of breathing may be much relieved by the *first bleeding*, these symptoms commonly, and after no long interval, recur; often with as much violence as before. In the event of such recurrence, the *bleeding is to be repeated*, even *in the course of the same day*, and, perhaps, *to the same quantity* as before.

Sometimes the *second bleeding* may be *larger* than the *first*. There are persons, who, by their constitution, are ready to faint even upon a small bleeding; and, in such persons, this may prevent the drawing so much blood at first as a pneumonic inflammation might require; but, as the same persons are frequently found to bear *after bleedings* better than the *first*, this allows the *second* and *subsequent bleedings* to be larger, and to such a quantity as the symptoms of the disease may seem to demand.

BLEEDINGS TO BE EMPLOYED EARLY.

It is according to the state of the symptoms that bleedings are to be repeated; and they will be more effectual when practised in the course of the *first three days* than afterwards; but they are not to be omitted, although four days of the disease may have already elapsed. If the physician shall not have been called in sooner; or if the bleedings practised during the first days shall not have been large enough, or

even although these bleedings shall have procured some remission; yet, upon the recurrence of the urgent symptoms, the bleeding should be repeated at any period of the disease, especially within the first fortnight; and even afterwards, if a tendency to suppuration be not evident, or if, after a seeming solution, the disease shall have again returned.

OF THE QUANTITY TO BE TAKEN.

With respect to the *quantity* of blood which ought, or which with safety may be taken away, no general rules can be delivered, as it must be very different, according to the state of the disease, and the constitution of the patient. In an adult male of tolerable strength, *a pound of blood avoirdupois is a full bleeding.* Any quantity above *twenty ounces* is a *large*, and any quantity below *twelve* a *small, bleeding.* A quantity of from *four* to *five pounds*, in the course of *two* or *three days*, is generally *as much as such patients will safely bear*; but, if the intervals between the bleeding and the whole of the time during which the bleedings have been employed have been long, the quantity taken upon the whole may be greater.*

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* Bleedings produce the best effect when the blood is drawn off as quickly as possible in a large full stream; and, in order to prevent syncope, the patient ought to be laid horozontally, or even with his head lower than his trunk.

With respect to the quantity of blood to be drawn at once, or in the whole course of the disease, no general directions can be given; it must depend entirely on the circumstances of the disease and of the patient. In general, it is usual to continue the discharge

CUPPING TO FOLLOW BLEEDING.

When a large quantity of blood has been already taken from the arm, and when it is doubtful if more can with safety be drawn in that manner, some blood may still be taken by cupping and scarifying. Such a measure will be more particularly proper, when the continuance or recurrence of pain, rather than the difficulty of breathing, becomes the urgent symptom; and then the cupping and scarifying should be made as near to the pained part as can conveniently be done.

EXPECTORATION COMING ON NOT A REASON TO REMIT THE REPETITION OF BLEEDING.

An expectoration takes place sometimes very early in this disease: but if, notwithstanding that, the urgent symptoms should still continue, the expectoration must not supersede the bleedings mentioned; and, during the first days of the disease, its solution is not to be trusted to the expectoration alone. It is in a more advanced stage only, when the proper remedies have been before employed, and when the

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until the patient can either breathe more freely, or feels a considerable abatement of the pain. If, however, the pain does not abate while the blood continues to flow, but signs of fainting appear, the blood must then be immediately stopped.

If the pain and other symptoms continue violent, or return after the first bleeding, it will then be necessary to have recourse to the operation; and it must be repeated frequently through the course of the disease; avoiding, however, so large an evacuation at once as may induce fainting.

symptoms have suffered a considerable remission, that the entire cure may be trusted to a copious and free expectoration.

AVOIDING OF HEAT.

While the bleedings we have mentioned shall be employed, it will be necessary to employ also every part of the *antiphlogistic regimen*, and particularly to prevent the irritation which might arise from any increase of *heat*. For this purpose, it will be proper to keep the patient *out of bed*, while he can bear it easily ;* and, when he cannot, *to cover him very lightly while he lies in bed.*† The temperature of his chamber ought not to exceed *sixty degrees* of Fahrenheit's thermometer; and whether it may be at any time *colder*, I am uncertain.‡

DILUENT DRINKS.

Mild and *diluent drinks*, moderately *tepid*, at least *never cold*, given by small portions at a time, ought to be administered plentifully. These drinks may be impregnated with vegetable acids. They may be properly accompanied also with nitre, or some other neutrals; but these salts should be given separately from the drink. §

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* This is seldom practicable.

† The practitioner should carefully attend to this direction, and see to its performance; for in such cases, clothes upon clothes are usually heaped upon the patient, but when in a sweat this must not be attempted.

‡ The reverse of this is usually attempted.

§ These salts generally render the drink nauseous; and, as plentiful dilution is absolutely necessary in these cases, so far from

It has been alleged, that both *acids* and *nitre* are ready to excite coughing; and in some persons they certainly have this effect; but, except in persons of a peculiar habit, I have not found their effects in exciting cough so considerable or troublesome as to prevent our seeking the advantages otherwise to be obtained from these medicines.*

PURGATIVES AND GLYSTERS.

Some practitioners have doubted if purgatives can be safely employed in this disease; and indeed a spontaneous diarrhœa occurring in the beginning of the disease has seldom proved useful: but I have found the moderate use of cooling laxatives† generally safe; and have always found it useful to keep the belly open by frequent emollient glysters.

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rendering the patient's common drink nauseous, by impregnating it with ill-flavoured medicines, we ought, by every possible means, to endeavour to make it as agreeable as we can, that he may be the more easily prevailed on to take it plentifully; for this purpose, tamarind drink is highly advantageous; apple drink, by pouring boiling water upon apples; rennet whey, balm and sage tea, barley-water; and above all, warm linseed tea, is best in this disease.

* Acids have certainly done good, as containing oxygen without the matter of caloric; but nitre, as containing oxygen combined with caloric, is supposed to *heat* the frame, according to the experience of modern practitioners.

† The cooling laxatives are, salts, manna, &c. but, in these cases, three or four ounces of infusum sennæ, with half an ounce of Glauber's salt, may be given without danger.

VOMITING DANGEROUS, BUT NAUSEATING DOSES OF ANTIMONY BENEFICIAL.

To excite full vomiting by emetics, I judge to be a dangerous practice in this disease: but I have found it useful to exhibit nauseating doses; and in a somewhat advanced state of the disease, I have found such doses prove the best means of promoting expectoration.*

FOMENTATIONS.

Fomentations applied to the pained part have been recommended, and may be useful;† but the application of them is often inconvenient, and may be entirely omitted for the sake of the more effectual remedy, blistering.‡

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* The tartar emetic is the medicine generally employed for this purpose. The dose of it in these cases must be very small, and well diluted, as in the following formula:

R. Antimon. tartarisat. gr. ii.
Aq. font. unc. vii ss.
Syr. papaveris rubr. unc. ss.
M.

The dose of this mixture ought not to exceed three table spoonfuls, when given with this intention.

† The breast should be first fomented with warm vinegar, at any rate this should not be omitted for the feet.

‡ The application of a large blister to the part affected ought to be the first prescription in all complaints of the thorax, except some remarkable or urgent cause forbid the practice, because it is a most efficacious remedy, and is as necessary as bleeding.

BLISTERS.

Very early in the disease, a blister should be applied as near to the pained part as possible. But as, when the irritation of a blister is present, it renders bleeding less effectual; so the application of the blister should be *delayed* * *till a bleeding shall have been employed.* If the disease be moderate, the blister may be applied immediately after the first bleeding; but, if the disease be violent, and it is presumed that a second bleeding may be necessary soon after the first, it will then be proper to delay the blister till after the second bleeding, when it may be supposed that any further bleeding may be postponed till the irritation arising from the blister shall have ceased. It may be frequently necessary in this disease to prevent the blistering. The keeping the blistered parts open, and making what is called a perpetual blister, has much less effect than a fresh blistering.†

SQUILLS.

As this disease often terminates by an expectoration, so, various means of promoting this have been proposed: but none of them appear to be very effectual; and some of them, being acrid stimulant substances, cannot be very safe.

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* As blisters are a long time before they begin to draw, they may be immediately ordered, and put on before the bleedings.

† This should be had in remembrance by the young practitioner. The part must be allowed to heal first; but after blistering the sternum, blisters on the sides may be employed.

The gums usually employed seem too heating; *squills* seem to be less so; but they are not very powerful, and sometimes inconvenient, by the constant nausea they induce.*

OILY DEMULCENTS.

Mucilaginous and *oily demulcents* appear to be useful, by allaying that acrimony of the mucus which occasions too frequent coughing; and which coughing prevents the stagnation and thickening of the mucus, and thereby its becoming mild.

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* All the liquid forms of squills which we have in the shops are nauseating. Pills made of the dry powder, with an electuary or conserve, or honey, is the form in which squills affect the stomach least. The dose is 4 or 5 grains of the dry powder; 10 grains generally, if not constantly, produce vomitings. To prevent the nauseating effect of squills, the addition of some grateful aromatic is of material use. The pilulæ scilliticæ of the Edinburgh Pharmacopœia is a good formula, except that the dose of it must be large, in order to take a sufficient quantity of the squills, ten grains of it, containing only one grain of dry squills, supposing no syrup to be used in making the mass. One convenience, indeed, attends this formula, viz. that we can give small doses with more precision than if we use the powder alone. The gum ammoniac is an expectorant; and therefore, when given alone with the squills in these pills, may render a less dose of the squills necessary. If the extract of liquorice be omitted, the proportion of the squills to the whole will be increased. I have found myself squills very advantageous in this disease; and in some extreme cases, where patients have been suspected to have asthma, given the gum sagapen with it with great advantage, as a grain every three hours, and 15 drops of tincture of squills.

STEAM OF WATER.

The receiving into the lungs the steams of warm water, impregnated with vinegar, has often proved useful in promoting expectoration *.

NAUSEATING DOSES OF ANTIMONY.

But of all other remedies, the most powerful for this purpose are *antimonial medicines*, given in *nauseating doses*. Of these, however, I have not found the *kermes mineral* more efficacious than *emetic tartar*, or *antimonial wine*; and the dose of the kermes is much more uncertain than that of the others.

SWEATING NOT TO BE EXCITED BY ART.

Though a spontaneous *sweating* often proves the crisis of this disease, it ought not to be excited by art, unless with much caution. At least, I have not yet found it either so effectual or safe, as some writers have alleged When, after some remission of the symptoms, spontaneous sweats of a proper kind arise, they may be encouraged; but it ought to be without much heat, and without stimulant medicines. If, however, the sweats be partial and clammy only, and a great

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* Some practitioners propose the steam of vinegar alone; but it proves in general too irritating. The same objection may be made against using the steam of wine, which some practitioners have recommended instead of the steam of vinegar. Plain water is the best, as the warm vapour only acts by relaxing the internal surface of the lungs.

difficulty of breathing still remain, it will be very dangerous to encourage them.

OPIATES.

Physicians have differed much in opinion with regard to the use of *opiates* in pneumonic inflammation. To me it appears, that, in the beginning of the disease, and before bleeding and blistering have produced some remission of the pain and of the difficulty of breathing, opiates have a very bad effect, by their increasing the difficulty of breathing, and other inflammatory symptoms. But, in a more advanced state of the disease, when the difficulty of breathing has abated, and when the urgent symptom is a cough, proving the chief cause of the continuance of the pain, and of the want of sleep, *opiates* may be employed with great advantage and safety*. The interruption of the expectoration, which they seem to occasion, is for a short time only, and they seem often to promote it, as they occasion a stagnation of what was by frequent coughing dissipated insensibly, and therefore give the appearance of what Physicians have called Concocted Matter.

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* The only safe opiate is *Dover's Powder*, (pulv. Ipecac. comp.) 2 grains given every three hours, until sleep, or perspiration be induced.

CATARRH.

CATARRHUS.

COLD OR CATARRH DEFINED.

The Catarrh is an increased excretion of mucus from the mucous membrane of the nose, fauces, and bronchiæ, attended with pyrexia.

CAUSE.

The remote cause of catarrh is, most commonly, *cold* applied to the body. This application of cold producing catarrh, can in many cases be distinctly observed; and I believe it would always be so, were men acquainted with, and attentive to, the circumstances which determine cold to act upon the body.

THE SYMPTOMS.

The disease of which I am now to treat generally begins with some difficulty of breathing through the nose, and with a sense of some fulness stopping up that passage. This is also often attended with some dull pain and a sense of weight in the forehead, as well as some stiffness in the motion of the eyes. These feelings, sometimes at their very first beginning, and always soon after, are attended with the distillation from the nose, and sometimes from the eyes, of a

thin fluid, which is often found to be somewhat acrid, both by its taste, and by its fretting the parts over which it passes.

These symptoms constitute the *coryza* and *gravedo* of medical authors, and are commonly attended with a sense of lassitude over the whole body. Sometimes cold shiverings are felt, at least the body is more sensible than usual to the coldness of the air; and with all this the pulse becomes, especially in the evenings, more frequent than ordinary.

These symptoms seldom continue long before they are accompanied with some hoarseness, and a sense of roughness and soreness in the trachea, and with some difficulty of breathing, attributed to a sense of straitness of the chest, and attended with a cough, which seems to arise from some irritation felt at the glottis. The cough is generally at first dry, occasioning pains about the chest, and more especially in the breast. Sometimes, together with these symptoms, pains resembling those of the rheumatism, are felt in several parts of the body, particularly about the neck and head. While these symptoms take place, the appetite is impaired, some thirst arises, and a general lassitude is felt over all the body.

TERMINATION OF CATARRH.

These symptoms mark the violence and height of the disease; which, however, does not commonly continue long. By degrees the cough becomes attended with a copious excretion of mucus, which is at first thin, but gradually becoming thicker, is brought up with less frequent and less labori-

ous coughing. The hoarseness and soreness of the trachea likewise going off, the febrile symptoms abating, the cough becoming less frequent, and with less expectoration, the disease soon after ceases altogether.

SELDOM DANGEROUS.

Such is generally the course of this disease, which is commonly neither tedious nor dangerous; but, upon some occasions, it is in both respects otherwise. A person affected with catarrh seems to be more than usually liable to be affected by cold air; and in that condition, if exposed to cold, the disease, which seemed to be yielding, is often brought back with greater violence than before; and is rendered not only more tedious than otherwise it would have been, but also more dangerous, by the supervening of other diseases.

A SORE THROAT OFTEN ACCOMPANIES CATARRH.

Some degree of the cynanche tonsillaris often accompanies the catarrh; and, when the latter is aggravated by a fresh application of cold, the cynanche also becomes violent and dangerous, in consequence of the cough which is present at the same time.

SOMETIMES CONVERTED INTO PNEUMONIA.

When a catarrh has been occasioned by a violent cause; when it has been aggravated by improper management; and especially when it has been rendered more violent by fresh and repeated applications of cold, it often passes

into a *pneumonic inflammation*, attended with *the utmost danger* *.

PRODUCTIVE OF CONSUMPTION.

In persons of a phthisical disposition, a catarrh may readily produce a *hæmoptysis*, or perhaps form *tubercles in the lungs*; and more certainly, in persons who have tubercles already formed in the lungs, an accidental catarrh may occasion the inflammation of these tubercles, and in consequence produce a *phthisis pulmonalis* †.

DANGEROUS TO ELDERLY PERSONS.

In elderly persons, a catarrh sometimes proves a dangerous disease. Many persons, as they advance in life, and especially after they have arrived at old age, have the natural mucus of the lungs poured out in greater quantity, and consequently requiring a frequent expectoration. If therefore a catarrh happen to such persons, and increase the afflux of fluids to the lungs, with some degree of inflammation, it may produce a *peripneumony*, which in such cases is very often fatal.

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* Colds, as they are called, are only mild cases of *pneumonia*, before treated of. The head is not so much affected in *pneumonia*, because of the violence of the inflammation of the lungs, which determines the blood from the head to that organ. How a simple cold is often converted into pneumonia, vide Improvements since the days of Cullen, page 372.

† How do you do? is a common expression. I have *only* got a cold, is the general answer. This being said to an eminent physician, Sir Richard Jebb, his answer was—"What, Madam, would you have worse? Are not our church-yards filled with persons whose first disorder was *only* a cold? It is the foundation of every other disease."

AN INFLAMMATORY DISEASE.

The proximate cause of catarrh seems to be an increased afflux of fluids to the mucous membrane of the nose, fauces, and bronchiæ, along with some degree of inflammation affecting these parts. The latter circumstance is confirmed by this, that in the case of catarrh, the blood drawn from a vein commonly exhibits the same inflammatory crust which appears in the cases of phlegmasiæ.

HOW COLD PRODUCES THIS DISEASE, BY STOPPING PERSPIRATION.

The application of cold which occasions a catarrh, probably operates by diminishing the perspiration usually made by the skin, and which is therefore determined to the mucous membrane of the parts above mentioned. As a part of the weight which the body daily loses by insensible evacuation, is owing to an exhalation from the lungs, there is probably a connexion between this exhalation and the cutaneous perspiration, so that the one may be increased in proportion as the other is diminished: and therefore we may understand how the diminution of cutaneous perspiration, in consequence of the application of cold, may increase the afflux of fluids to the lungs, and thereby produce a catarrh.

DOUBTS ON THIS SUBJECT.

There are some observations made by Dr. James Keil, which may seem to render this matter doubtful; but there is a fallacy in his observations. The evident effects of cold

in producing coryza, leave the matter in general without doubt; and there are several other circumstances which show a connexion between the lungs and the surface of the body.

ARISES FROM A MORBID HUMOUR PRODUCED.

Whether from the suppression of perspiration, a catarrh be produced merely by an increased afflux of fluids, or whether the matter of perspiration be at the same time determined to the mucous glands, and there excites a particular irritation, may be uncertain; but the latter supposition is sufficiently probable *.

REASONS FOR SUPPOSING THIS.

Although, in the case of a common catarrh, which is, in many instances, sporadic, it may be doubtful whether any morbific matter be applied to the mucous glands; it is, however, certain, that the symptoms of a catarrh do frequently depend upon such a matter being applied to these glands, as appears from the case of measles, chincough, and especially from the frequent occurrence of contagious and epidemical catarrh. The mention of this leads me to observe, that there are two species of catarrh †, as I have marked in my Synopsis of Nosology. One of these, as I suppose, is produced by cold alone, as has been explained

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* How colds are caught, vide Discoveries since the time of Dr. Cullen, p. 372.

† 1. Catarrhus a frigore.

2. Catarrhus a contagione.

above; and the other seems manifestly to be produced by a specific contagion.

CURE.

The cure of catarrh is nearly the same, whether it proceed from cold or contagion; with this difference, that in the latter case, remedies are commonly more necessary than in the former.

WARMTH.

In the cases of a *moderate disease*, it is commonly sufficient to avoid cold, and to abstain from animal food for some days *; or perhaps to lie a-bed †, and, by taking frequently of some mild and diluent drink, a little warmed, to promote a very gentle sweat ‡; and after these, to take care to return very gradually only to the use of the free air.

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* This is necessary, or mutton broth, with a quantity of barley in it, may be taken.

† At any rate, not to get up before ten o'clock, and to breakfast a-bed, taking warm milk porridge, made chiefly of gruel.

‡ When I have a severe cold, I remain in the house, the room moderately warm, and drink very frequently of linseed-tea, sweetened with liquorice-root, sliced.

Take Half an ounce of linseed,
An ounce of liquorice-root, sliced;

Put these into a mug; add a quart of boiling water; let it remain on the hob near the fire. Often take half a wine-glass of this, warm.—These ingredients will serve for twice.

THE ANTIPHLOGISTIC REGIMEN.

When the disease is *more violent*, not only the antiphlogistic regimen must be exactly observed, but various remedies also become necessary.

BLOOD-LETTING.

To take off the phlogistic diathesis which always attends this disease, *blood-letting*, in a larger or smaller quantity, and repeated according as the symptoms shall require, is the proper remedy *.

VOMITING.

For restoring the determination of the fluids to the surface of the body, and at the same time for expediting the secretion of mucous in the lungs, which may take off the inflammation of its membrane, *vomiting* is the most effectual means †.

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* If there be any pleuritic pains, this plan should be pursued.

† Vomiting is very seldom had recourse to, except for very young children; for after *bleeding*, *purging* is usually had recourse to. The best purges are the saline.

R. Magnes. Vitriolat. dr. 1.
Infus. Rosæ, unc. 1.
Aq. Rosæ, dr. 3.
Syr. Violæ, dr. 1.

Ft. Haust. quartâ quâque horâ sumend. donec alvus sit soluta.

After the operation by the repetition of these purgative draughts, there should be a cessation of them until the next day.

BLISTERS.

When the inflammatory affections of the lungs seem to be considerable, it is proper, besides blood-letting, to apply blisters on some part of the thorax *.

DEMULCENTS.

As a cough is often the most troublesome circumstance of this disease, so demulcents may be employed to alleviate it †.

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* The blister should be large, and put over the breast. With very young children, in whom blisters sometimes mortify, and always produce a pain they cannot comprehend, a *Burgundy pitch plaster* is found to be sufficient.

† As the following:

℞. Pulv. Tragacanth. comp.
Confect. Amygdal. aa, dr. 1.
Syr. Tolut. dr. 2.
Infus. Rosæ, dr. 6.
Aq. Rosæ, unc. 7.
Ft. Mist.
Cap. Coch. larg. duo secundâ quâque horâ.

Or,

℞. Ol. Amygdal. dr. 1.
Kali ppti, scr. 2.
Syr. Tolut. dr. 3.
Mucil. Gum. Arab. dr. 5.
Aq. Rosæ, unc. 7.
Ft. Emulsio.
Cap. Coch. larg. duo 3tiâ quâque horâ.

OPIATES.

But, after the inflammatory symptoms have much abated, if the cough should still continue, opiates afford the most effectual means of relieving it; and, in the circumstances just now mentioned, they may be very safely employed *.

GESTATION.

After the inflammatory and febrile states of this disease are almost entirely gone, the most effectual means of discussing all remains of the catarrhal affection, is by some exercise of gestation diligently employed.

For children, I have found the following best.

R. Aq. Ammon. Acet, unc. 1ss.
Acet. Scillæ, dr. 1.
Syr. Tolut.
—— Pap. errat.
Aq. Rosæ, aa dr. 1.
Ft. Mist.

A teaspoonful to be taken every three hours.

To take off the tickling in the throat, a Tolu lozenge is excellent, or a piece of prepared liquorice, extract of liquorice.

For infants, a teaspoonful of syrup of mulberries, (*Syr. Mori.*)

In urgent cases, the following linctus is good here, as well as in consumption.

R. Cons. Rosæ.
—— Cynosbat aa unc. 1.
Syr. Tolut. dr. 2.
Pulv. Gum Arab. dr. 2.
Tinct. Scillæ, gtt. 20.
Ft. Linct.

A small quantity of this is to be taken, as often as the cough is troublesome.

* A teaspoonful of *paregoric elixir*, (tinct. opii camphorat.), is then mostly employed, or five grains of Dover's powder.

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN.

LAWS OF THE ANIMAL ŒCONOMY.

LAW I.

A DUE EXCITEMENT IS NECESSARY FOR THE MAINTENANCE OF THE VIGOR OF BOTH MIND AND BODY.

LAW II.

A TOO GREAT EXCITEMENT EXHAUSTS THE VIGOR OF BOTH MIND AND BODY.

LAW III.

A WANT OF EXCITEMENT ACCUMULATES THE EXCITABILITY, BUT LESSENS THE VIGOR OF BOTH MIND AND BODY.

PRUDENCE directs to the happy medium, which gives the best and most permanent health.

The *third* law will be the object of our *present* consideration.*

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* These persons who wish to see more at full, in illustration of these Laws, will please to consult my Philosophy of Medicine, in Five Volumes, Fifth Edition, which proves how anxious the present race are for obtaining instructions on medical subjects.

FIRST, OF DARKNESS.

As a due degree of stimuli is necessary for the maintenance of firm health, we now see the reason why confinement in dungeons, independent of dampness, is so injurious to the health of prisoners; and why the meaner sort of houses in this country, since they have been *darkened* in consequence of the heavy window-tax, have been observed to exhibit a race of pale, weak, and sickly inhabitants.* Finally, why the *gloomy chambers* of the sick, labouring under asthenic diseases, are rendered more unwholesome, and acquire additional horrors, by indiscriminately shutting out the cheerful beams of day: and why the effects of all diseases of this class are increased, by thus imprudently depriving the patient of one of the most exhilarating cordials in nature.

Blanched plants lose their green colour, and become white, and are not then capable of supporting a great quantity of light.

That the nervous power is accumulated by defect of sensorial action, we have the most striking example in vision. It is, indeed, surprising how far the eye can accommodate itself to darkness, and make the best of a gloomy situation. When first taken from light, and brought into a dark room, all things disappear; but, after a few minutes, the pupil dilates, and the optic nerve having accumulated sufficient sensorial power, many objects may be discerned.

Xenophon, in his account of the retreat of the ten thousand, mentions that the Persians and Greeks had always lights in their camps; but, as

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* The fact was repeatedly noticed in his different journeys, by the philanthropic Mr. Howard; and it is notorious to every eye, that the servants and others who are stewed in dark chambers, deprived of *fresh air* and the *morning light*, exhibit the most sickly appearance. It requires another Howard to point out the *evils* sometimes inadvertently inflicted by *governors* on the *governed*. LIGHT, AIR, and WATER, ought *never to be taxed*. It is easy to lay *a tax* on *houses* according to their *respective rents*, IN LIEU of this *wicked tax* on *window-lights*, and *the tax* on *glass*. Will not a WILBERFORCE, or a SIR JOHN SINCLAIR, or some *other patriot*, take up the cause of the *multitude*, who are now being destroyed *by inches* by *their rulers*?

they traversed Thrace, the King Seuthes had lights around his camp, which kept him concealed, and enabled him to perceive any person who should have the boldness to reconnoitre his camp, whereas the Persians and Greeks could only discover the spy in the camp itself.—The reason of this is explained by the principle above.

There was a gentleman of great courage and understanding, who was a major under King Charles I. This unfortunate man, sharing in his master's misfortunes, and being forced abroad, ventured, at Madrid, to do his king a signal service; but, unluckily, failed in the attempt. In consequence of this, he was instantly ordered to a dark and dismal dungeon, into which the light never entered, and into which there was no opening but by a hole at the top, down which the keeper put his provisions, and presently closed it again on the other side. In this manner the unfortunate loyalist continued for some weeks, distressed and disconsolate; but, at last, began to think he saw some little glimmering of light. This internal dawn seemed to increase from time to time, so that he could not only discover the parts of his bed, and such other large objects, but, at length, he even began to perceive the mice that frequented his cell, and saw them, as they ran about the floor, eating the crumbs that happened to fall. He formed here an acquaintance with a spider, whose motions he observed, which was his chief amusement. After some months in this confinement, he was set at liberty; but such was the effect of the darkness, and so great the accumulated irritability of the optic nerve, that he was obliged to remain shut up for some time after, and accustom himself by degrees to the light.

SECONDLY, OF SLEEP.

Though man, in his sleeping state, is a much less perfect animal than in his waking hours, and though he consumes more than one third of his life in this his irrational situation, yet is the wisdom of the AUTHOR of NATURE manifest even in this seeming imperfection of his work.

It was before noticed, that the application of *stimuli*, after a certain time, *exhausts* the IRRITABILITY, or EXCITABILITY, of the system. To *recruit which loss*, the all-wise and merciful CREATOR has instituted the season of SLEEP, at which time the stimuli of external objects are excluded by the *silence* and the *darkness* of the night; and as *cold* accumulates the irritability of the fibre, it is wisely fore-ordained that

this season shall be accompanied with a suitable degree of *cold*. Common or ordinary sleep, produced by the application and action of stimuli, from what has been said, seems, therefore, to be a state, the result of a law of the animal œconomy, which takes place in order to remove the effects of stimuli, and to *restore*, as much as possible, the *excitability* of the system; as, during this state, the stimulus of volition is suspended, all external objects cease to make impression, even cathartics lose their powers of action, while the *atmospheric air* is almost the only external power, which then continues to be applied, at once carrying off what is excrementitious from the lungs, as it affords, probably, to the system, that *principle* which is expended by the various actions of life.

Besides the very great quantity of the IRRITABLE PRINCIPLE perpetually *expended* in moving the arterial, venous, and absorbent systems, and the other organs of the body, there is also, during our waking hours, a *constant expenditure* of it by the action of our locomotive muscles and organs of sense. Thus the optic nerves, where they enter the eye, and the great expansion of the nerves of touch beneath the whole of the cuticle, evince the *great consumption* of the IRRITABLE PRINCIPLE by the senses. And our perpetual muscular action in the common offices of life, and in constantly preserving the perpendicularity of our bodies during the day, evince a considerable *expenditure* of the IRRITABLE PRINCIPLE by our locomotive muscles. It follows, therefore, that if the exertion of sense and muscles be for a while *intermitted*, that a *large quantity* of the IRRITABLE PRINCIPLE must be *accumulated*.

As soon as a person begins to sleep (as in *hemiplegia*, where the *limbs* on *one side* have lost their power of voluntary motion, and the patient is for many days employed in moving those of the *other*, or, as when in the *cold fit* of intermittent fever, some parts of the system have for a time continued *torpid*, and have thus expended less than their usual expenditure of the IRRITABLE PRINCIPLE), a *hot fit* succeeds; so, owing to *the suspension* of the voluntary actions, the peristaltic motion of the intestines, and the exclusion of the strong stimulus of mental exertion, an *accumulation* of the IRRITABLE PRINCIPLE takes place during sleep, and the blood-vessels and absorbents have, in consequence, an increased action, and hence the nutriment is, with great energy, forced over every part of the system, to repair the wastes of the preceding day; for it is probable that *nutrition* is almost entirely performed in

SLEEP; and that young animals grow more at this time than in their waking hours, as young plants have long since been observed to grow more in the night, which is generally their time of sleep. Hence also the *heat* of the system is gradually increased, and the extremities of feeble people, which had been cold during the day, become warm, while, in others, sweats are so liable to break out towards morning.

Hence, upon waking after a profound sleep, we stretch our limbs, which arises from the *accumulation* of the *irritable principle* in the fibres. From the same cause, when the muscles of our face have been long in a state of inaction, we yawn: and children and young animals, who have abundant irritability, are impatient of confinement, and seem never easy but in a change of position.

THIRDLY, OF FAMINE.

In our attempts to recover those who have suffered under the calamities of FAMINE, great circumspection is required. Warmth and cordials are the means usually employed; and it is evident that these may prove too powerful in their operation, if not administered with caution and judgment. For the body, by *long fasting*, as we have seen, is reduced to a state of *extreme irritability*; the minuter vessels of the brain, and of other organs, collapse for want of fluids to distend them; the stomach and intestines shrink in their capacity; and the pulsations of the heart and arteries are quick and feeble, with scarce sufficient energy to propel the scanty current of blood. Under such circumstances, there are instances of persons who have been suddenly struck dead, in consequence of having took a *full meal*, and drank a *glass* of *brandy*. As with those who have been *frost-bitten* or *drowned*, friction with *snow* or *cold water* is the only safe *stimulus* that can, at first, be applied to the surface, so here the *lowest stimulus* in the scale is to be preferred to that *sudden transition* too often practised by *unphilosophic* practitioners. "The external heat," says Dr. Percival, "should be at first lower than that of the human body, and gradually increased, according to the effects of that stimulus. Whey, gruel, weak broth, is the only nourishment that can, with propriety, be administered. If cordials are employed, they should be given with the most frugal hand, and considerably diluted. Perhaps wine-whey might be better, and when the *superfluous irritability* is a little worn off, and the stomach strengthened, an

egg may be mixed with the whey, or administered under some more agreeable form. But let it be remembered as an indubitable maxim," adds Dr. Percival, " *that the return to a full diet should be conducted with great caution, and by very slow gradations.*"

In the last campaign in India, when the Marquis Cornwallis was in possession of Tippoo Sultan's palace and his gardens, at Bangalore, and was preparing to drive him from his capital, the indignant Sultan expressed his ineffectual rage, by the continual fire of cannon on our troops. As this display of his wrath could effect little, he came to Lieutenants Chalmers and Nash, with the welcome tidings of an intended release, and requested them to take two letters on the subject of peace, which, he said, he had been very anxious to obtain, ever since the commencement of the war. He presented them with two shawls each, and five hundred rupees, and ordered horses and attendants to go with them to the camp. He had, at this very time, concerted a scheme to destroy the commander-in-chief of our forces, whom he thought, by this expedient, to lull into a treacherous security. As our allies, the Nizams had their army stationed at some small distance from ours, he ordered a party of horse to steal between the two armies, which, affecting to belong to the Nizam, asked our picquets for the *Burra Said*, or chief. Not suspecting them to be enemies, they pointed to his tent. These horsemen galloped immediately towards the tent, and having drawn their swords, cut down several lascars and people in their rout. A party of sepoys having turned out with alacrity, their progress was soon stopped. Some shots were fired at them as they retreated, but they got off, however, having sustained very little loss.

" This scheme," says Major Diram, " was one of those daring objects that have been so frequently practised by the native powers against each other, in effecting revolutions in the East; and had these assassins been conducted by a guide, or their judgment been equal to their spirit in the attempt, it is possible they might have effected their murderous project. But the Mahomedan *horse*, when sent upon such services, are kept *fasting*, and then intoxicated with *bang*, a plant mixed with their tobacco, of which they take a large dose before they enter upon so hazardous an enterprise. This inebriation renders their exertions so wild and disunited, that it is almost impossible for them ever to prove successful against a vigilant enemy.

It was thus in former days, when the Jesuits wanted any desperate

act of wickedness to be done, having pitched upon their man, they would shut him up in a large chamber, lighted with a small taper no bigger than one's little finger, and hung with black cloth, on which were painted hell-flames and devils, and all manner of terrible shapes. This was called the chamber of meditation; and here the person was kept meditating and *fasting* for twenty-four hours; he was then worked up to the pitch at which his employers wanted him, by an *intoxicating draught;* and, shocking as it is to tell, it is nevertheless true, that the errand on which he was sometimes sent after this preparation, was, under the pretext of religion, MURDER.

FOURTHLY, OF COLD.

During the winter, by the absence of the stimulus of *heat*, and in part of *light*, plants and many animals become *torpid*, the organs of circulation and of nutrition then perform their functions but languidly, and life itself appears suspended. In consequence of the *diminished action* of *these stimuli*, the IRRITABILITY *accumulates*, and manifests itself at the return of *spring*. A slight degree of heat *then* produces powerful effects upon the fibres thus *delicately irritable*. Animals, which had concealed themselves under ground, even when the cold is greater than in autumn, venture forth from their subterraneous retreat, trees and plants put forth their leaves and blossoms, and birds, and animals, and man himself, is sensible of the stimulus of heat from the return of *spring*, his fibres being rendered *more irritable* by the winter's cold.

Dr. Hale, in his *Vegetable Statics*, relates, that he cut down a vine, and cemented to its mutilated stump, glass tubes, each seven feet long, and one-fourth of an inch diameter, with brass caps, by which they were screwed on one above another, till they rose to the height of 36 feet.

By these gages it appeared,

1st. That the *sap* began visibly to *rise* March 10, when the thermometer, by day, stood only at 3 *degrees* above the *freezing point;*

2d. That, April 18, it was at its *height* and *vigour;*

3d. That from *that time* to May 5th, the force *gradually decreased;*

4th. That it constantly rose *fastest* from sun-rise to about 9 or

10 in the morning, and then *gradually subsided* till about 5 or 6 o'clock in the afternoon;

5th. That it rose *sooner* in the morning, after *cool weather*, than after *hot days*, and in *proportion* to the *coldness* of the *night* and *subsequent heat*;

6th. That after *several successive cold days* and *nights*, the sap would rise during the *whole day*, if it chanced to be *fine*, although *slowest* at *noon*.

7th. That if warm weather had made the sap flow vigorously, that vigour would be *abated* immediately by a cold easterly wind and a cloudy sun, when the sap would *sink* at the rate of an inch per minute; but when the sun shone out, and the wind shifted, it rose again as usual.

8th. The OLDEST VINES were *soonest affected* by a *change* of *temperature*, and in them the sap *first* began to *sink*.

9th. And, on the contrary, when the tube was fixed to a very short stump of a YOUNG VINE, and at only 7 inches from the ground, the sap flowed *incessantly*, and *fastest* of all, in the *greatest heat* of the *day*, *sinking* only after *sun-set*.

He then makes this *general conclusion*, that the rapidity with which the sap circulates in the vine during SPRING is *five times greater* than the *rapidity* with which the *blood* flows in the *arteries* of *a horse*, that it is *considerably slower* in the SUMMER than in spring, very *languid* in AUTUMN, and *ceases altogether* in the WINTER.

The above experiments clearly demonstrate, that it is not from *heat* and *light* alone that the sap rises in the vine, for if that were the case, it would *increase* as the heat increased, it would be greatest in the *noon-day* and in the *heat* of *summer*, and *less* in *spring* than in *autumn*, whereas the reverse is here shewn to be the case. It must therefore depend on the IRRITABILITY of the fibre, which gets *exhausted* by the stimulus of *heat* and *light*, and is *accumulated* by *its absence*.

In the same way the IRRITABILITY of the *hedysarum gyrans* is exhausted by the heat of the noon-day sun; and, according to the experiments of FONTANA, it is proved that the IRRITABILITY of the *sensitive*

plant is *great* in the *morning*, *diminished* during the *heat* of the *day*, and *little* or *none* in the *evening*.

Hence it is that the return of *cold* and *frost* in the *spring* is so *noxious* to vegetables, and that this season is *forward* according to the severity of the preceding winter.

FONTANA observed, that during winter the *vipers* which he kept for his experiments were in a *torpid state*, though the thermometer was at 59 degrees. He endeavoured to render them vigorous by *warmth*, and exposed them to a heat of 67 degrees only. *In two minutes they died*, though during *summer* they bear a *much greater degree* of *heat*, without the *least injury*; but *then* they are *less irritable*.

SPALANZANI observed the *newts* bury themselves in the earth, and become *torpid*, in the month of October, before the thermometer in the shade falls to 54 degrees; and that they *re-appear* in the month of February, though at that time it freezes during every night, and not unfrequently during the day the thermometer is many degrees *below* 54.

"What is the reason," inquires this excellent observer, "that these animals revive in *spring*, when the cold is more intense; and sink into torpidity at a much less degree of cold in the *autumn*?"

I will solve this problem, by observing that in *autumn* a very great stimulus is required to act upon the fibres of these animals, *exhausted* as it has been by the heat of the summer; but in *spring*, the least stimulus, the least increase of heat, is sufficient to put the fibre into action, its *irritability* having *accumulated* during winter, in consequence of the *absence* of the *common stimuli*.

Thus precisely is it with the *vegetable tribe*, for they *sleep* in winter, and are *awakened* by the vernal sun; but die, if too powerful a heat be suddenly applied.

On this principle, as I observe in my lectures, we may account for the destruction of plants by *blight* in spring; for unless there be *frost* at night, there is no blight; and it may be remarked, that the blight does not take place during the action of the *frost*, but at the rising of a *cloudless sun*.

Hence it is that our garden crops, such as French beans, and peas, which usually suffer most by blight after a frosty night in summer, suffer

no injury if they are watered immediately before the rising of the sun, because the evaporation abates the heat.

The effects of winter are therefore very great in cold climates, because the accumulation of the *irritability* is in proportion to the abstraction of the stimulus of heat.

In Lapland corn ripens in 60 days, whereas in France it requires 120 or 160 days. The truth of what is here advanced may be proved by exposing vegetables *alternately* to *heat* and *cold*: it is surprising how much their growth and the power of vegetation is increased. But in these experiments care must be taken to vary the temperature by degrees; because the *irritability accumulating* in the fibre by the abstraction of the heat, a very small quantity of this stimulus *then* applied is sufficient to exhaust it entirely, or to destroy it.

When, through exposure to extreme cold, the fingers, or other external parts of the human body, are frozen, the heat in these parts must necessarily be reduced to the lowest point consistent with life. If artificial heat be suddenly applied, a mortification ensues, and the parts that have been *frost-bitten* drop off. But if they be thawn by friction with snow, and afterwards the gentlest warmth be then gradually applied, the parts are soon restored to their wonted use and activity.

When the state of torpor, or apparent death, is brought on, whether in the dormant animals, or man, whether by the sedative effects of cold, or by submersion, the phænomena are extremely similar. *Both* are bereft of SENSE and MOTION. *Both* lose a large portion of ANIMAL HEAT. *Both*, on their first recovery, exhibit similar efforts towards restoring RESPIRATION and CIRCULATION. *Both* are restored by a *gentle degree* of WARMTH, and are destroyed by a HEAT *too great* or *too suddenly applied*. Indeed, the GRAND SECRET of the art of restoring *suspended animation*, consists in NICELY ADJUSTING THE NATURAL AND ARTIFICIAL STIMULI TO THE EXACT TONE OF THE IRRITABLE FIBRE.

If the recovery of the *marmot* is more uniformly certain, it is not only because the torpor is more gradual, but because the degree of heat is regulated by the steady, unerring hand of NATURE; whereas in man it is governed by the uncertain and often capricious rules of ART.

On going into a *cold-bath*, suppose at 33 degrees of heat on Fahrenheit's scale, the action of the capillary arteries of the skin is *diminished*, or ceases for a time. Hence less or no blood passes these capilla-

ries, and paleness succeeds. But soon after emerging from the bath, a more florid colour, and a greater degree of heat, is generated on the skin than was possessed before immersion; for the capillary arteries, after their quiescent state, occasioned by the want of stimulus, become *more irritable* than usual to their natural stimuli, owing to the *accumulation* of *irritability*, and hence a greater quantity of blood is transmitted through them, and in consequence, a greater degree of heat succeeds. Besides the *quiescence* of the minute vessels of the lungs, there are many other systems of vessels which become torpid from their irritative associations with those of the skin.

From the *quiescence* of such extensive systems of vessels as the capillaries of the skin, and the minute vessels of the lungs, with their various absorbent series, a great *accumulation* of *irritability* is occasioned; part of which is again expended in the increased exertion of all these vessels, with an universal glow of heat in consequence of this exertion, and the remainder of it adds vigour to both the vital and voluntary exertions of the whole day.

If the activity of the subcutaneous vessels, and of those with which their actions are associated, was too great before cold immersion, as in the hot days of summer, by which the *irritable principle* was previously *diminished*, we see the cause why the cold bath gives such present strength; namely, by stopping the unnecessary activity of the subcutaneous vessels, and thus preventing the too great *exhaustion* of the *irritable principle*.

In those constitutions where the degree of *inirritability*, or of debility, is greater than natural, the coldness and paleness of the skin, with the quick and weak pulse, continue a long time after the patient leaves the bath; and the subsequent heat approaches by unequal flushings, and he feels himself disordered for many hours. Hence the bathing in a cold spring of water, where the heat is but 48 degrees of Fahrenheit's thermometer, much disagrees with those of weak or unirritable habits of body; who possess so little of the *irritable principle*, that they cannot, without injury, bear to have it diminished even for a short time; but who can, nevertheless, bear the more temperate coldness of Buxton baths, which is about 80 degrees of heat, and which strengthens them, and makes them, by habit, less liable to great *quiescence* from small variations of cold, and thence less liable to be disordered by the

unavoidable accidents of life. Hence it appears, why people of these irritable constitutions, which is another expression for a defective irritability, are often much injured by bathing in a cold spring of water; and why they should continue but a very short time in baths, which are colder than their bodies; and should gradually increase both the degree of coldness of the water, and time of their continuance in it, if they would obtain salutary effects from cold immersions.

One Richard Edwards, of Liverpool, a healthy young man, twenty-eight years of age, with black hair, and a ruddy complexion, went into some fresh water, which was about the temperature of mild weather, viz. about 40 degrees by the thermometer. He continued in this water 34 minutes, and then went into a *warm bath* at 95 degrees.

Here, for the first moments, he felt very warm, but his hands and feet gave him pain, and in two minutes, being still in the warm bath, he was seized with *shiverings*. The water was now increased in heat 5 degrees, but our experimentalist still felt cold; the heat was further increased 10 degrees, and after remaining in the warm bath half an hour, he came out sick and very languid, his pulse was quick and feeble. He passed a very feverish night, and the next day had wandering pains over his body, with great weakness, resembling the *incipient stage* of a *fever*.

This experiment was repeated by me in London, upon several other persons, and always with the same result, all going from a cold bath into the hot, came out shivering, and with fever on them; and when put to bed, shewed very strong signs of fever.

Whereas, when they first went into the hot bath, and afterwards jumped into the cold, they found no injury whatever.

Mr. Stonehouse, of Mincing Lane, has for many years been in the habit of going to the sea-side, when he takes first an hot-bath, after that proceeds to bathe immediately in the open sea, which has never injured him, but on the contrary, much invigorated his frame.

Hence it was, that the Romans, after using the most violent exercise in the Campus Martius, used to wash off the sweat and filth by plunging into the Tiber.

Thus the Russians leave their luxurious beds, heated by stoves under them, to roll themselves in the cold snow.

Thus are post-horses at watering-places, with pails of water thrown upon them, when the sweat is rubbed off them by means of a piece of iron hoop, with impunity; and at many inns there is a place filled with water, through which horses are led, or they are taken to a pond.

Thus persons leave their warm beds, and go a shooting in the most piercing weather: the injury then is not from the alternation of *heat* to *cold*.

Suppose now a person to be wet through, and his clothes well soaked by a deluge of rain. The first thing he does is to run to the fire. Some keep their clothes on, and dry them on their backs: the consequence is, that evaporation further takes place, a longer cold is experienced from that cause. Spirits are now had recourse to, and the fire stirred again and again. Fever is raised, and unless this gets subdued by sensible perspiration, which is one of the means Nature uses to get rid of superabundant heat, a severe cold, or pneumonia is formed, and perhaps he loses his life. If he, fortunately, escapes, the same may not be always, for the pitcher, after going to the well, is broke at last. If a gentleman, as is generally the case, changes his wet clothes for dry ones, before a large fire, the same thing nearly happens. "Oh pray come near the fire!" is the general cry; whereas, if he alters his dress in his bed-room, and remains at some distance from the fire, for a time, no inconvenience would have arisen.

The celebrated Dr. Brown mentions, in his works, that he laboured under a most severe cold and hoarseness. Among the symptoms, he felt an increased sensibility to cold. He knew not what to think of this fact. In this uncertainty he gratified his feelings, and in a warm season of the year shut out every avenue that could let in air, and put on an additional garment. He ate full meals of animal food, and took some warm brandy and water after supper, in a moderate proportion. He did not debar himself from exercise in the middle of the day, but while under this plan of treatment, he perceived his hoarseness and cold manifestly to increase. He had besides every day to lecture to his class, and now scarcely could be heard, and speaking was a great labour. He began at last to perceive, that stimulants aggravated his disorder, and without hesitation began an opposite course of management. He therefore forsook a warm room, let the air play around him, confined his diet to vegetable aliment, chiefly ate water-gruel, abstained from

strong drinks, and substituted in their room plenty of barley-water. The result was, that a cold that had remained several weeks was cured in a few days. "I afterwards," says he, "had occasion to try the "same management on myself, and others, and always experienced the "same effect."

Mr. Clarkson, in his Essay on the Impolicy of the African Slave Trade, informs us, that when slaves are brought on board, the seamen, to make room for them, are turned out of their apartments, and sleep, for the most part, on the decks, from the time of their leaving the coast of Africa (where the *days* are *excessively hot*, and the *dews* excessively *cold* and *heavy*) to their arrival at the West India Islands. From this bad lodging he proceeds, and this continual exposure to *colds* and *damps*, and *suddenly* afterwards to a burning *sun*, FEVERS originate, which carry many of them off! This fever attacks the whole frame; but the eye commonly feels the inflammation most. The inflammation of the eyes terminates either in dispersion or suppuration: in the first instance the eyes are saved; in the latter they are lost.

The inflammation of the eye is not the only disease produced in Egypt, by the succession of *hot days* to *cool nights*, where it is the custom to sleep, during the summer, in the open air, any more than on board our slave ships; as the reader will find upon recurring to Alpinus and the later travellers. In both situations causes and effects run parallel. The well-known danger of exposure to *dews* in *hot climates*, and indeed in all climates, in certain cases, seems to depend on the same principle. It is also probable, that the *heat* of the *preceding day* enables the *dews* of the *night* to prepare the system for the *stimulating effects* of the *heat* of the *succeeding day*; so that of two persons who should expose themselves without precaution to the *cold* of the *night*, and the *heat* of the *following day*, he who should have been most *exhausted* the day before by the *heat*, would, if other circumstances could be rendered alike equal, be most injured by the next alternation.

Thus when any part of the body has been exposed to *cold*, it is liable to be much more affected by heat and other stimuli, than before the exposure. Of this the method of treating *frozen limbs* in cold countries affords a beautiful and decisive proof. Were a frozen limb to be brought before a fire, or immersed in warm water, a violent inflamma-

tion would come on, and speedily terminate in mortification. They therefore take *snow* to rub the parts benumbed with cold, and very gradually expose them to a warm temperature. This custom universally obtains in all the northern climates, where the rude inhabitants possess a method of relief that might do credit to the ingenuity of more enlightened nations, and such as is not unworthy of their imitation! The pungent pain felt upon holding an hand, much chilled, to the fire, is another exemplification of the same principle, which seems, says Dr. Beddoes, to be one of the most general laws of animal nature.

Modern history furnishes us abundant other examples. Thus Larrey, in his Memoirs of Military Surgery, says, During the three or four days of extreme cold, which preceded the battle of *Eylau*, and till the second day after the battle, not a man complained of any accident depending on congelation; nevertheless, we had passed these days, and a great part of the nights from the 5th to the 9th of February, in the snow, and a most severe hoar frost. The imperial guard especially, had remained in observation in the snow, making very little movement for more than four-and-twenty hours: no person complained of having the feet frozen. In the night between the 9th and 10th, the temperature all at once rose from three to five degrees above the freezing point. A fall of glazed frost very abundant on the morning of the 10th was the forerunner of the thaw, which took place during the day, and continued nearly at the same degree of temperature for several days. From this moment, a great number of soldiers, both of the guards and of the line, presented themselves, complaining of sharp pains in the feet, numbness, heaviness, and a disagreeable formication in the extremities: they were very little tumefied, and of a dark red colour; in some, a slight redness was perceived near the roots of the toes, and on the superior surface of the foot; in some others, the toes, deprived of all motion, sensibility, and heat, were already black and dried up. All the patients assured me that they never felt any painful sensation during the extreme cold they were obliged to support at the bivouacks from the 5th to the 9th of February inclusive; and that it was not till the 10th, in which day the temperature rose eighteen or twenty degrees, that they perceived the first effects of congelation. They first experienced a painful tingling in the feet, to which succeeded a numbness, uneasy sensation, immobility, and a sense of weight; a feeling of cold, without being excessive, was at the same time perceived. All those pa-

tients who were able to get *into the town*, or to the *fires* of the bivouac, to warm themselves, *were the worst off*: very fortunately the greatest part of them followed the advice given them by myself and my colleagues. We ordered them to employ immediately frictions with *snow*, and afterwards lotions with camphorated brandy, which prevented the gangrene in those limbs in which it had not yet made its appearance, whilst at the same time it broke out almost instantly in those who exposed their limbs to the *fire*. Its progress was most rapid; it was, nevertheless, circumscribed, and its boundaries were for the most part confined to the toes: sometimes, however, it occupied half the foot: it very rarely ascended above the ancles.

But the army of Buonaparte in Russia exhibited a still stronger instance, illustrative of this law: 500,000 men, in the flower of their youth, and well equipped, went out upon this fatal expedition. He had with him more than 100,000 horses. When the sun shone on this splendid host, making an harvest of iron spears, the feathers on the helmets, and the flags streaming in the air, with every kind of martial music, the mind beheld with joy and terror this vast assemblage of warriors, led on by the most consummate general in the world. It appeared as if nothing could resist the power of such an host of men. The ground trembled under their feet as they moved; though so vast a body, it was with all the order and regularity of a small disciplined army. Like a whirlwind, at first they swept all before them, and breaking through all opposition, arrived at *Moscow*. This vast city, containing near a million of population, the lovers of their country set *on fire*, on the approach of the French, in more than an hundred places; thus producing a catastrophe which stands unequalled in the annals of history. The army of Cambyses, buried under the Lybian sands, the expedition of Darius against the Scythians, the defeat of the legions of Varus, the disasters of Charles XII. offer no comparison with those scenes of horror and despair, which have left behind them such dreadful monuments. What sight so awful and deplorable as the beholding, in extreme agony, the deaths of four hundred thousand warriors! The fearful march they had of immense space to perform, presenting nought to their view but the ruins of villages and towns; their silent marchings, in the midst of frosts, not only lasting for some days, or some weeks, but above a month, every minute whereof was reckoned, each second pro

ducing a loss and sufferings; an army of victims delivered up to the horrors of hunger, without strength to oppose a furious enemy, throwing away their arms, abandoning their cannon, disputing with each other the vilest aliments, having but one thought—that of return, and but one aspect—that of death. These are features Tacitus wanted when opening to our view the forests of Teutberg, where he traced in so sublime a manner the defeat of the legions of Varus. But all the force of his genius, all the eloquence of his speech, would not have sufficed for the description of such dreadful scenes. Can any expressions be sufficiently energetic and forcible to paint the anguish of these pale warriors, who, advancing suddenly from their ranks, with a convulsive laugh, staggered a moment, uttering stifled cries, and dropping down dead in the midst of their companions, who passed over them with indifference. Self was now become their greatest evil; no succour to hope from those crowds of men who marched only to prolong their grief and troubles, and who halted only to die. All their souls were cast down dejected; all sentiment extinguished; or, to use the expression, misfortune remained without witnesses—there were none but victims.

But at the time when whole battalions remained motionless, and frozen in the midst of deserts, other unhappy soldiers lost their way, left alone in these vast solitudes. Happy when chance brought them to a long line of dead, thereby making out to them the march of the army: they were guided by these bloody traces, and perished when this horrid succour failed. Alas! how many farewells were not heard! how many tears were not wiped away!

One of these unhappy wretches, a General Officer, left behind by his companions, was long wandering in the windings of an immense forest; no dwelling presented itself to his view: if he met with a village, it was ruined and deserted; if he fell in with any men, they were dead or expiring. At length he perceived the smoke of a cottage; his heart beat with violence, but his feet, half naked, refused their support; he had only a few steps to go further to obtain relief; his strength failed him; he beholds the place of his safety, but cannot reach it. He then placed his knee on the ground, tears off the bandages which covered his feet, and wishes to rekindle warmth by chafing them with snow. Alas! he does not perceive the knee he supported himself on is already frozen. It is in vain he strives to rise; whilst he is making the last struggle, his frozen hand is fixed to the earth, his uncovered face becomes ice;

with difficulty he discovered some soldiers passing, but could not make himself heard by them. There is in the course of congelation a state of re-action, which has not yet been sufficiently studied by physicians, and which is deserving of their whole attention. At the moment life is expiring, where an irresistible sleep overwhelms them, this sleep is suddenly disturbed by great pain and restlessness, which by degrees re-animate the senses; each organ seems to make prodigious efforts to repel the destructive agents which kill them, and in this obstinate struggle life often is spent, unless aided by foreign succour. Arrived at this state, our wretched wanderer slightly recovered; his blood circulates, he opens his eyes, and perceives a woman, who approached at his call; she supports him, draws him along, encourages him; they reach the cottage door, where the most appalling sight presented itself before him. Sixteen soldiers, like shadows, were motionless around some wood they had set on *fire;* no one took any notice, or turned aside his head at the noise; they did not even regard each other. In vain this charitable woman cries out to them they must perish, if they withdraw not a little from the *fire;* they neither see nor hear; their eyes are fixed, their hands are agitated with convulsive motions. Fifteen minutes scarce had passed, *not one soul of them remained alive.* As fresh soldiers arrived at that cottage, you might have beheld them approaching eagerly the *fire*, sit silently down on the dead bodies of their comrades, and seized by the sudden change, fall down dead by each other's side.

Now after the application of cold, which, according to circumstances, produces a greater or smaller diminution of the actions of the living system, and at length sleep itself, there may be an infinite number of gradations between a *fatal inflammation* and a *transitory glow*, and this according as the previous cold and the subsequent heat have varied in intensity;—but whatever be the degree, the effect depends on the same principle.

By respiring a *cold atmosphere*, the same thing happens to the nostrils, fauces, lungs, as to the external surface of the body upon going into a *cold bath;* and if we pass suddenly from *such an atmosphere* into a *warm room*, what happens to the skin will, in some degree, happen to the membrane lining these cavities; a *glow* or *inflammation* will ensue, according to the difference between the two temperatures and the length of time passed in the cold.

When the application of cold or moisture to a superficial part only is succeeded by an *inflammation* of the respiratory cavities, the consent of the whole system easily explains this remote local affection. The cause of disease pervades at once, and feels, as it were, or searches the whole body, but affects only in a degree to draw our notice to the organ which from habit or structure is *most tender*. Suppose a person fainting from the heat of a crowded room, a window is thrown open with the door, and many are exposed to a current of cold air, yet *how various* are the disorders produced! Should any other part, from previous circumstances, have been rendered more sensible to its influence, we shall in consequence have either a sore throat, a diarrhœa, a stiff neck, tooth-ache, or the rheumatism, in place of a catarrh.

Children are so susceptible of *inflammation* that a great part of the mortality among them is, as far as I have observed, and can judge, to be ascribed to the ignorance of mothers and nurses of the power which even a moderate change of temperature, if suddenly made, has to effect their tender and irritable frame.

In *London* the mortality is estimated at two out of three children born. Now, so great a destruction of life must proceed from some other causes than the tender fabric of the infant body. Children are incapable of coughing up, hence the great danger these tender creatures run, and hence the necessity of the greatest attention to the sources of *colds* which must operate strongest upon their delicate frames. To *harden* children, as they harden *steel*, by cold, is a mistaken idea, and thousands have perished from this cause. But it has been the after application of heat, the taking them afterwards to a large fire, and heaping on clothes, which has done the mischief. This has excited an inflammation of the lungs, and then a general fever, which has consumed their bodies, and brought them to an early grave.

Nor is the case much better in the country.

Names of the Parents.	*L.*	*D.*	*Names of the Parents.*	*L.*	*D.*
Marg. Jones . . .	6	3	Samuel Holyhead . .	4	8
Mary Holmes . . .	4	0	George Highwey . .	8	0
Thomas Sandford . .	7	4	Constant Richards .	3	0
John Smouch . . .	6	6	Mary Walker . . .	3	0
Anne Roberts . . .	3	0	Edward Evans . . .	3	4
E. Felton	7	6	Anne Hughes . . .	4	2
E. Jinks	1	6	Jane Ingram . . .	3	1
R. Richards . . .	1	0	John Hammond . .	4	2
Robert Pigging . .	7	1	Elizabeth Smith . .	3	4
E. Ward	3	2	Mary Richards . . .	2	1
Sarah Colley . . .	4	1	Sarah Richards . .	6	0
Lucy Clark . . .	3	6	Catherine Harper . .	5	0
Elizabeth Higenson .	4	4	Anne Hutchenson . .	4	3
Joseph Sonds . . .	3	1	Philip Saunders . .	4	0
John Holyhead . .	4	3	Elizabeth Heath . .	7	1
Thomas Felton . .	7	2	Mary Ames	7	1
Anne Williams . .	7	1	Mary Bagnold . . .	4	0
John Smith . . .	5	2	Elizabeth Mansfield .	8	1
Joseph Hutchenson .	4	0	Elizabeth Evans . .	4	0
J. Ellis	3	3	Anne Horton . . .	3	0
Elizabeth Poignor .	3	1	Thomas Ingram . .	3	0
Anne Withington . .	6	4	Joseph Ingram . .	3	0
Jane Underwood . .	5	2	Jane Swanwick . .	5	2
Jane Fields . . .	3	2	John Beeston . . .	4	1
James Ingram . . .	2	2	John Bostick . . .	5	0
John Askey . . .	5	0	Joseph Heans . . .	6	3
John Smith	2	0			
E. Horton	7	0	55 * Total .	224	99
E. Hollinshead . .	3	5			

Now, which, think you, is the most likely, that there should be something *wrong* in *our management?* or that *three parts* in *four* of our fellow-creatures should, in one of the most airy towns in Great Bri-

* This inquiry was made by Dr. Beddoes, at Shifnal, in Shropshire where firing is very plentiful and cheap. It was asked of each grown up person there, how many children he had had, and how many were dead? In the first column you have the name of the family; in the next, the number of the children alive; and the third, the number of the children dead.

tain, be doomed unavoidably to perish before they come to their full growth, without answering any other purpose than to give trouble and endure pain? If this last be the case, then of all the things in this wide world, the human frame is the worst contrived and executed. And I leave you to judge whether such a supposition stands to reason. If then *our management* of our *children* be *wrong* in any material points, a stop may be put to this *excessive mortality*, for we should have only to find out what these points are, and shape our conduct accordingly. One may with the greater propriety embrace an opportunity of disseminating the knowledge, how INFLAMMATORY FEVERS and COLDS are caught, as their proximate causes, and the manner in which they are to be got rid of, though in my opinion perfectly ascertained, is far from being generally understood even by the members of the medical profession; and if any person, not belonging to that profession, should suspect this to be a wanton paradoxical assertion, he may find in the case of *opium*, and of the cool treatment of *small-pox*, &c. instances equally striking, where one generation of pathologists passed away after another, without being able, in the case of *opium* *, to perceive the *plainest appearances*, or in that of *small-pox*, to draw the *simplest conclusion*. So servilely imitative an animal is man! so loath to employ his own powers of perception and thought!

The sudden, and sometimes severe, changes of weather to which this climate is subject, are perhaps the most unhappy circumstances attending our situation; and the pernicious effects of them upon the human constitution are so frequently experienced, that diseases of the breast may be truly considered as endemical among the inhabitants of this island. We frequently find a *cold* and *keen* day succeeded by one as *mild* as spring or *warm* as summer; or, what is still worse, the forenoon accompanied with a *sharp*, *dry*, *biting*, *north-east wind*, and the latter part of the day uncommonly *warm*. It is impossible but this

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* One cannot compare Haller's clear and satisfactory parallel of *wine* and *opium*, published in 1769 (*El. Physiolog.* t. V. p. 619—11) with Cullen's perplexed and hypothetical doctrine of *opium*, and his whole article *sedentia*, published in 1789 (*Mat. Medica*, t. ii. 217, *et seq.* without a sense of humiliation!—Dr. BEDDOES.

sudden change from *cold* to *heat* must, in delicate constitutions especially, be productive of mischief.

When alterations of weather from *cold* to *heat* succeed gradually, those salutary powers of accommodation with which the animal economy is furnished, may prevent any mischief or disorders, though an alteration in the constitution proportioned to that in external nature must necessarily succeed those changes; but that which might, without inconvenience to the constitution, be produced *gradually*, will, if *too sudden* and *abrupt*, be felt as a disease; as a man may with ease and safety gradually descend a flight of steps, when a *sudden jump* from them would endanger his life. Thus we bear, without injury, the *heat* of *spring* after the *coldest winter*, though it must be confessed that disorders take on at that season a more inflammatory appearance.

But where the change is more violent than in the transition from one season to another, as when Europeans go to the East or West Indies, until the constitution becomes accommodated to the climate, the *uncommon heat* to which such persons are exposed, must have a most powerful effect on their irritable frames. Immediately on the arrival of *northern strangers* within the *tropics*, their circulation becomes quicker, their perspiration freer; a lassitude or debility takes place, from the uncommon expense of the irritable principle consumed by the increased actions of the heart and arteries, and the secretions dependent in a great measure on their movements. In short, the pulse is rendered harder, fuller, and stronger. The skin is redder than usual, but especially that of the face, with other signs of general plethora, to which the fluids from increased absorption certainly contribute, though it chiefly arises from the increased force of the vascular system. In short, more or less of *fever* is kept up, which varies in different people, according to circumstances, continues for an indeterminate time, or until the increased force of the heart and arteries, kept up by the *accumulated irritability* of ths system, from the previous effect of *cold*, ceases, that is, until the right balance between the irritability of the fibre and the external stimuli be properly adjusted *.

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* Attentive to this law of the animal economy, the English government send their troops first to *Gibraltar*, before they pass fro

But if, on the contrary, we pass from a *warm* to a *cold* climate, no such evil effects are observed to take place. *Linnæus*, in a paper in the Amænitates Academiæ, expresses his astonishment at the impunity with which the *heated* Laplander rubs himself with *snow*, or even rolls in the *snow*, and drinks the *cold snow water*. We every day see *horses*, in a state of the *most profuse perspiration*, freely washed with *cold water*, and always *without injury*. I have, says Dr. Beddoes, within these two years, caused horses, accustomed to be stabled, to be turned out in winter; and no cough, catarrh, or other disorder, has ever been the consequence: it appears, therefore, to me, adds this ingenious physician, that within certain limits, and those not very narrow, the transition from a *higher* to a *lower temperature* is attended with *no danger* to animals in a state of tolerable health; and a person, I conceive, might *suddenly pass* from an *higher* to a *lower temperature* without *inconvenience*, even where the difference is so great as to be capable of producing *considerable inflammation*, if the change should be made with equal celerity in a contrary direction.

It has been before observed, that if you keep *one* of your hands in *cold water* for two minutes; then put *both hands* into *warm water*; and *the hand* which has been in the *cold water* first will feel much the *warmer* of *the two*. Or else; handle some *snow* with *one hand*, while you keep *the other* in *your bosom*, that it may be no colder than the rest of your body; now bring *both* within an *equal distance* of the *fire*, and you will feel *how much more* THE HEAT affects the *cold* than the *warm hand*. This would be a *dangerous experiment*, were the hand kept *too long* in the *snow*, or if *the fire* be *too strong*. For, in some countries, where the *cold* is much greater than it ever is in England, it is common for people to have their toes and fingers and ears so *frost-bitten* as to lose all their feeling; and should that person *warm* them at a fire, or put them into *warm water*, a VIOLENT INFLAMMATION is sure to come on, and the part *mortifies*. So they are obliged to set cautiously about bringing the part back to its natural feeling, and

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a cold climate to the intemperate regions of the West Indies, whereby thousands of lives have been preserved.

they rub it hard with *snow*, by which means they recover it in the gentlest and most gradual manner.

So when a person is out in very *cold weather*, the air, every time he draws his breath, brushes his *nostrils*, *wind-pipe* and *lungs*; and, just as is the case with the *outward skin*, it makes *these parts more liable to be* INFLAMED *by* HEAT.

If you attend to what not unfrequently happens in coming out of a *cold moist air* into a *warm room*, you will first perceive *a glow* within your nostrils and breast, as well as all over the surface of your body. Soon afterwards, more especially, if you drink warm or spirituous liquors, a disagreeable dryness, or huskiness, will be felt in the nostrils and breast; by and by a short tickling cough will come on from an increased secretion of the glands, of the nose, fauces, and wind-pipe, which being of a sharp nature, stimulates the glands to a further increase of secretion, which often occasions a very large discharge of sharp mucus. You will perhaps at first shiver a little; this will make you draw nearer the fire, and drink some more brandy and water, but it will be all to no purpose. The more you try to *heat yourself*, the more chilly and uncomfortable will you become, for you have now *caught cold*, that is, you have *brought on* AN INFLAMMATION of *the chilled part*, which is the smooth moist membrane which lines the nostrils, and goes down the wind-pipe into the lungs.

I have sometimes been able to make other persons attentive to the progress of these phenomena, and nothing has appeared more evident, than that during exposure to *wet* and *cold* no tendency to INFLAMMATION is perceptible, but that *subsequent heat*, *exercise*, in the dry, and *stimulants*, produce the *glow* or INFLAMMATION.

By keeping *quiet* and *cool* for some time after being *wet* in summer, and by avoiding *a sudden transition* into a *warm temperature*, in *cold weather*, and by *temperance*, with regard to diet, (rather *abstemiousness*), in *both cases*, those INFLAMMATORY DISEASES, for which *cold* only *prepare the system*, may be easily avoided; and any person, by acting upon these *principles*, may have, at pleasure, a *slight* or a *violent catarrh*, or probably no *catarrh at all*.

The *popular treatment*, therefore, of *colds* during their early stage, is just as prejudicial as the ancient *hot regimen* during the SMALL-POX. White wine whey, buttered ale, increased clothing, getting drunk, &c.

originated from the supposition, that *colds* proceeded from *obstructed perspiration*; whereas it is found, from the very accurate experiments of Sanctorius, and our countryman Dr. Keil, that *the perspiration* is at that time *as abundant* as at *any other*. It has *continued*, because the faculty were, till of late, unapprised of *the nature* of *colds*, and from partial successes in this dangerous practice, as *perspiration*, when produced, carries off *superabundant heat*. For the fluid that escapes from the body consists chiefly of watery moisture, which, uniting with a large portion of sensible heat, is carried off in the form of steam. Hence the more speedy the evaporation, the more sudden is the diminution of heat: or, in more familiar terms, the greater is the degree of cold thus generated in the constitution. Hence *the heaping* on of STIMULI in a disease demanding *an opposite treatment*, has *oftentimes* done *good*, but it is to be feared, it *has not unfrequently done harm*; whereas the treatment here laid down is both *safe* and *effectual*.

POPULAR REMEDIES FOR COLDS.

1.

Elder wine, hot, going to bed.

2.

Egg-hot, or hot ale sugared.

3.

White-wine whey.

4.

Treacle-posset; this preparation is now almost out of date.

5.

A glass of hot brandy and water, or rum.

6.

A glass of brandy in a basin of gruel, going to bed.

7.

A tea-spoonful of Paregoric Elixir, (Tinct. Opii Camphorat) going to bed, and half an ounce of salts the following morning.

8.

Five grains of Dover's Powder (Pulv. Ipecac. comp.) going to bed.

OBSERVATION.

All these remedies are dangerous, and induce a general fever, which carries off the local inflammation *provided* a sweat be induced, the chief mean provided by nature for carrying off superabundant heat: *but* if no perspiration be produced, these remedies add to the local inflammation, and often converts a simple *catarrh* into a dangerous *pneumonia*.

9.

Bathing the feet in warm water before going to bed, then taking in bed a warm basin of gruel, and lying in bed later the next morning, breakfasting in bed; a gentle purgative in the morning, as,

R. Magnes. Vitriolat. scr. 2.
Syr. Altheæ dr. 1.
Confect. Amygdal. scr. 1.
Infus. sennæ tart. dr. 3.
Infus. Rosæ unc. 1.
Ft. Haust. aperiens.

Barley-broth and some light-pudding for dinner, and total abstinence from beer and wine. As soon as the cold is gone, to live well, and take a glass, or two, of Port-wine.

10.

Two grains of Calomel going to bed; half an ounce of salts early in the morning; warm gruel for supper and breakfast, and the feet put into hot water before going to bed.

11.

R. Ol. Amygdal.
Syr. Pap. alb. āā dr. 4.
Sacch. alb. dr. 3.
Ft. Linct. demulcens.

A tea-spoonful may be taken frequently.

R. Extr. glycyrrhiz. dr. 2.
Gum Tragacanth. dr. ½.

Myrrh. pulv. dr. 1.
Sacch. puriss. unc. 2.
Aq. Rosæ, gr. 1.
Ft. Trochisci emollient.

One of these lozenges to be frequently used, to remove the tickling sensation in the fauces.

12.

Some give Dr. James's powders, three, or four grains, to bring on a breathing sweat; but there is danger here of catching a worse cold afterwards and of the *remedy* being *worse* than the *disease.*

13.

The common saline draught, made by putting a scruple of Salt of Wormwood into a cup, adding to it four table-spoonfuls of warm water; then a lump of powdered white-sugar, after which is to be added a table-spoonful, that is, half an ounce of fresh Lemon-juice, the pips and pulp being removed, repeated four or five times a day, has never failed doing good, is pleasant to children, and is only neglected, as colds are seldom thought worth the trouble of care.

14.

In old asthmatic people, we must promote the defluxion from the lungs.

R. Oxymel Scillæ, dr. 2.
Sal. corn. cervi. gr. 4.
Aq. cinnam.
Aq. pulegii āā dr. 6.
Ft. Haust. 6tâ quâque horâ sumend.

To which it may be necessary to add the following pills:

R. Gum. Sagapen.
—— Myrrh āā scr. 1.
Tinct. Myrrh q. s. Ft. pil. 20.
Cap. pil. 1. cum. sing. Haust.

15.

Blisters are sometimes desirable for adults, but not to torture children with them. Volatile embrocation here will answer best, or a Burgundy Pitch Plaster.

DOCTOR SYDENHAM'S RECOMMENDATION.

He recommends covering the head over with the clothes, whereby the patient breathes his own air, and falls into a perspiration.

DOCTOR BEDDOES' DISCOVERY.

HYDROGEN GAS CURES A COLD.

Note from Mr. Edgeworth.

To Dr. Beddoes.

June 1, 1795.

I caught cold: next day had great tightness over my chest. I breathed at several intervals from a bag five quarts of *hydrogene air* mixed with near thirty-five of common air; during the time I felt giddy, and was obliged to desist for some minutes. My tightness however was completely carried off and did not return. *My cold afterwards became quite trifling.*

R. E.

DOCTOR BEDDOES' DISCOVERY.

PNEUMONIA CURED BY HYDROGEN GAS.

In the inflammatory stage of catarrh, and all the gradations of disease which connect a common cold with pleurisy, I hope the exhibition of a lowered atmosphere will prove an effectual remedy. From several cases I am at present inclined to prefer hydrogen or azotic air, because they can be so freely and frequently administered. In my letter to Dr. Darwin, I have described the effect of atmospheric air lowered with one-eighth of hydrogen air, and respired for a quarter of an hour, in an inflammation of the chest. The acute pain entirely subsided while the patient was breathing this mixture, and the febrile symptoms disappeared. —I have been eye-witness of another fact of the same kind since.— Beddoes.

DOCTOR THORNTON'S DISCOVERY.

VAPOUR OF ÆTHER.

Letter from Mr. Townsend *to* Dr. Beddoes.

March 21, 1795.

Sir, *Hollywell-street, Strand.*

As Dr. Thornton has requested me to relate to you my case, and as the communication may be of service to others, I will give it as well as I am able, hoping for the indulgence of the critical reader, from the consideration of the motive that has induced me to make it public. On the 18th of this month, I was for some time in a large room, which was much crowded and very warm. When I came out of this place, I perceived the wind to be very cold. It was easterly, and I had to face it as I returned home. Upon getting into bed I took some brandy and water, and soon after felt myself uncomfortable and restless. On the next morning when I awoke I coughed frequently, and threw up a thin transparent mucus, which came up freely and with no pain. I was convinced I had caught a bad cold, for my colds are uncommonly severe, and these are the constant symptoms of their having seized me. The next morning after breakfast, my breast was very sore, and my cough very troublesome and painful. The mucus became glutinous, and somewhat difficult to discharge. After I had dined, and drank three glasses of wine, the oppression and pain increased in severity. Believing now I had an inflammation of the lungs from the pungency of the pain, I hastened to see Dr. Thornton, who made me inhale the vapour of æther. I received from it almost immediate relief, both with respect to the oppression as well as the pain in my breast. Nevertheless I continued much affected all the evening, and coughed a great deal, and when I expectorated I felt a soreness at my breast. Before I went to rest I put my feet in warm water above half an hour, and took some warm gruel in bed. All this I have often done before, when so attacked, but seldom found much relief from it. I had recourse again, as directed, to vapour of æther, and inhaled two tea-spoonfuls, which again gave me the same immediate relief as before. I very soon after fell asleep, had a good night's rest, and when I awoke in the morning, instead of difficulty of

breathing, a long fit of coughing, my breath hot, my tongue dry and parched, as had been invariably the case after such symptoms, as above described, I breathed, on the contrary, freely, coughed only once or twice, and proceeded throughout the day in my business, without the smallest inconvenience.

I am, Sir, &c.

THO. WINNE TOWNSEND.

Observations on this Case by DR. THORNTON.

1. The manner of inhalation is very simple. Two tea-spoonfuls of æther are put into a tea-pot. This is held near a candle, and the thumb is put over the spout. When the vapour begins to press upon the thumb, it is transferred to the mouth, and the air is drawn into the lungs. This is to be repeated until the whole be consumed, or ease acquired.

2. That the vapour of æther is inflammable air we have the following proof.—I had often put æther into phials containing oxygene air, with a view to produce an explosion, but it never exhibited any other phænomenon than a blue lambent flame. One day, having washed out a phial that contained æther, I transferred it into the vital air, and by way of shewing the properties of this gas, having blown out a lighted match, I conveyed the burnt end into the phial of oxygene air, but unexpectedly, instead of the match rekindling, a most violent explosion took place. I then put two drops of æther into a stronger phial containing this air, and having warmed it with my hand, upon transferring the red-hot part of a match into the oxygen gas, it produced an explosion nearly as loud as a gun: the match is shivered, caloric is disengaged, water is formed, and the remaining air, after this process, is incapable of supporting combustion. As the phial in this instance did not burst, I have frequently repeated the experiment, and have always found that one drop of æther to an ounce measure of vital air, will produce the same phænomenon.

DR. THORNTON'S DISCOVERY.

YEAST IN PNEUMONIA.

Letter from DR. THORNTON *to* DR. BEDDOES.

London, Feb. 2, 1795.

DEAR SIR,

The communication of the Rev. Mr. Cartwright, which you published, on the efficacy of yeast in putrid fevers, induced me to pay much attention to this remedy. It appeared to me an excellent substitute for the effervescing mixture, which extricates too little *fixed air* to produce a very important action in the constitution.

As fixed air forms the chief ingredient in medicinal waters, it has been without much opposition introduced into the practice of medicine. Its great antiseptic powers have been fully ascertained. But in the present instance I am about to consider it also in another point of view. From the experiments of Dr. Percival, it appears, that fixed air is absorbed by the lacteals, and secreted from the blood by the kidneys, so as to affect the water in the bladder; hence it becomes a solvent for the stone. From those of Mr. Abernethy, it appears, that it is also absorbed by the skin, and you conjecture, "that the constitution might be saturated by the immersion of the naked body or limbs in vessels containing airs." These suggestions led me to a new mode of treating peripneumony. But it may perhaps be proper first to premise one or two trials of yeast in *putrid fever*.

Mr. Caldwell, some months back, requested me to go into Green-street, Leicester-fields, to attend Mr. HADRIL, who, he said, it was supposed, would not outlive the day. I found him labouring under a dreadful putrid sore throat: the tongue was black and thick coated, and the pulse quick and fluttering. Evacuations being first premised, yeast and bark in porter were exhibited every two hours. His sister, who nursed him, was soon after attacked by the same fever, but the throat was not affected. She was not like her brother, confined to her bed, but her weakness was so great that she could not walk across the room, nor even stand up half a minute without support. In both these

cases the relief from the yeast was very striking, and they were soon cured. The wife was also infected, who received a similar benefit from the yeast.

Mrs. KNIGHT, of Bolt-court, Fleet-street, had a white tongue; prostration of strength; the eyes glossy; the countenance vacant; with a hecking cough; great heat on the surface; pulse 120; complexion very florid. Having first given an emetic and cathartic, and well cleared the primæ viæ, I ordered three table-spoonfuls of yeast to be taken every two hours. After the second repetition of this remedy, it brought on a great sense of coldness; the stomach was inflated with wind; she eructated continually; and for two hours was threatened with hysteria. As the loss of the fever, added to the operation of the yeast, produced great faintness, her officious and alarmed friends gave her their grand specific for wind and lowness, geneva and water. Finding on the next day the fever returned, and a prejudice against the yeast, I treated it according to the ordinary practice; the inflammatory stage passed into the putrid, with twitching of the tendons, and other symptoms exciting alarm, and notwithstanding bark and wine, it run its course of one and twenty days.

Master KENNARD, who lives with Mr. Stoner, Charles-street, Tottenham-court Road, was brought to me by his mother for my advice. As he was also in the inflammatory stage of a putrid fever, I ordered an emetic of antimony, and after this operation cleared the intestinal canal with rhubarb and vitriolated kali; the fever, though greatly abated, still continuing, I recommended yeast, and the lad was in a few days perfectly recovered.

Having in the two last cases ascertained, that the sthenic pulse was sunk by the operation of the fixed air, extricated in the warm stomach from the yeast, I conceived, that in violent inflammation it might sometimes preclude the free use of the lancet, and a case happily occurred, at the close of last winter, which seemed to authorize the trial.

Mr. KENNEDY, a hair-dresser by trade, living at No. 86, in Tottenham-court Road, aged 35, of so nervous a frame that he could not shave his customers (his hand being subject to tremble), was attacked with the prevailing inflammatory disease of the last spring, which took off such a number of persons. He was seized with rigor and head-ache, succeeded by acute pains in the chest; his breathing became laborious,

and towards night he had violent delirium. I was sent for early in the morning, and I observed, 1st, a tense and oppressed pulse; 2d, great heat; 3d, great difficulty of breathing; 4th, acute pains in the right side; and 5th, total loss of sleep. I instantly called to mind Brown's ideas on catarrh. After a severe frost, with snow on the ground, the weather became mild, and the *accumulated irritability* was by the heat called into action.—Had blood been taken from the arm, the blood partaking of the same *increased irritability* would have contracted strongly, and we should have had that cupped appearance, and hard coagulum, so expressive of inflammation.

From this theory the art of cure seemed to be to adjust the stimuli to the tone of the irritable fibre, and as the ordinary stimuli produced inordinate action, from the increased irritability of the fibre, it became necessary to reduce these as early as possible. I was convinced, from former experience, that the oppressed pulse would have risen under the finger, as the stimulus of the blood was withdrawn; but as this fluid is with difficulty regenerated in habits like that of my patient, and in *this* epidemic bleeding had, as I observed, precluded quick recovery, I resolved to omit for the present the abstraction of this stimulus. I ordered the fire to be put out; I removed the stimulus of light; I would allow no one to sit in his room, or speak to him: to take off the stimulus of food from the stomach I gave him an emetic of tartarized antimony; and to take away all stimulus from the intestinal canal, I ordered a cathartic of rhubarb quickened by vitriolated kali. During the operation of these, I applied a very large blister to the chest, the stimulus of which I conceived would do no harm under the operation of the cathartic, and might do good by deriving from the lungs, and afterwards by drawing off the serum of blood, which is a species of half bleeding. To supply oxygene without caloric, I ordered from six to ten lemons in the twenty-four hours, in tamarind drink. Not contented with this, I wished the famished system to absorb as much fixed air as possible (whose sedative power on the heart and arteries you have sufficiently proved), and he took therefore yeast in his acidulated water, and was ordered frequently to plunge his arm in this fermenting ingredient. I directed two grains of calomel to be taken at bed time, the acid drink to be frequently repeated with the yeast, and I encouraged no hopes in my patient, and in the morning he was to take the cathartic before-mentioned, to which was added half a grain of tartarized antimony.

The next day I found the pulse of my patient less oppressed considerably. I asked him to attempt an inspiration, but he could not bear it. The want of sleep was now easily accounted for. The lungs being in part a voluntary organ, as strong action of the respiratory muscles was acute agony, the mind was kept constantly alert in preventing a too free respiration, hence perhaps the reason why the breathing was quick and laborious.—He had no return of delirium. I repeated the purges on the two following days. The pulse became softer; the tongue looked less white; the thirst was abated; the breathing relieved; he sweated profusely; and began now to covet some food. I now admitted the stimulus of light; I raised his hopes; and, progressively adding different stimuli, I came to bark; and in less than three weeks he was about on his business, and as well as ever.

Nearly about the same time I was called into Mrs. EATON, who lives in Shepherd's Market. She was attended by Dr. Reynolds, who wrote to me as follows:

Letter from DR. REYNOLDS, *Physician to his Majesty.*

To Dr. Thornton. *Jan.* 21, 1791.
Bedford-square.

DEAR SIR,

I shall be very happy in Mrs. Eaton's having your assistance, and I sincerely hope that her inhaling a reduced atmosphere will be of use to her. Her respiration is at this moment very laborious; if that can be relieved, I trust that she will do well.

Believe me, with the highest esteem and regard,

Dear Sir, your faithful friend and servant,

H. R. REYNOLDS.

Mrs. EATON's disorder seemed less confined to the pleura and intercostal muscles, and extended also over the mucous membrane of the lungs. Her pulse was 112, tense, full, and intermittent; her respiration extremely laborious; her cough very painful; and her expectoration great. The blood taken from the arm exhibited a cupped appearance, and hard coagulum, and the buffed coat, which is perhaps a secretion from the arteries. I stayed four hours with Mrs. Eaton, while I observed

the effect of *yeast* in her case, during which time I gave her half a pint to drink. Her hands and arms were also immersed in this liquid in a state of ferment, and it lowered the pulse to 94, and produced so much coldness, languor and dyspepsia, that for fear of her swooning, the window was obliged to be thrown up to let in the fresh air. The irritation on her lungs, she said was less, and what she expectorated was easy. She was bled in the evening, but no such alteration of the pulse, or languor, was produced from bleeding, as from yeast. —After this operation, for two nights she inhaled a quart of azotic to eighteen of common air, but it occasioned catchings of the breath, and augmented the pain. Only a small quantity being therefore inhaled, from a general law in the animal œconomy (now beginning to be understood), instead of lessening, it *quickened** the pulse, as Dr. Reynolds observed, at the time. The recovery in this instance was most striking. But I have also pursued the yeast without bleeding, in two other instances, with the most pleasing success: not that I would recommend this plan in every case, but only with such patients as are of a weak habit, and who, therefore, are sooner affected by the abstraction of stimuli. Might not *yeast* be conjoined with bleeding? and I must observe in the case of Mrs. Eaton, some gentlemen of the faculty, who had previously seen her and given her up as lost, are of this opinion with Dr. Reynolds.

I remain, Sir,

Sincerely your's,

R. J. THORNTON.

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* I imagine there are few circumstances (I never saw any) in which a lowered atmosphere does not at the moment *quicken* the pulse, while it weakens the action of the heart and arteries. T. BEDDOES.

DR. THORNTON'S DISCOVERY.

CICUTA AND DIGITALIS.

In considering sedatives according to their effects, may they not be naturally divided into two kinds, viz. *Direct and Indirect?*

By a *Direct Sedative*, I mean a medicine which operates more or less immediately as a sedative, without producing any stimulating effects; such as the cicuta, hydrogen air, and perhaps many other substances.

By an *Indirect Sedative*, I mean a medicine which, although it ultimately produces sedative effects, yet has some other previous stimulating operation; such as opium, &c.

Now, although opium has generally been ranked as the chief of the sedantia, yet its stimulating power is at present very well ascertained: and every practitioner knows (what we have already mentioned), that, if applied to the eye, or to a tender surface, it will produce more or less of irritation and pain, whatever ultimate sedative effects it may occasion. From this stimulating property, which is always more or less discoverable on its first exhibition, are we prevented from employing it in cases of strong active inflammation? For, in them, if opium is given alone, the phlogistic diathesis of the system is in genetal thereby increased, and the disease thus rendered more difficult of cure.

But this is probably not the case with some other substances, the subject of our present consideration, or if they are directly stimulant, and indirectly stimulant, that is, first produce a stimulant effect, this first stage is of so short a duration, that they may well rank as *direct* sedative powers, contrary to the sentiments of some Brunonians.

The cicuta, if applied to the most irritable surface, or even injected into the cavity of the chest itself, produces no pain; on the contrary, it will immediately relieve it, shewing its *direct* sedative power. No exhilaration is perceived; on the contrary, always a distress of the system, and a diminution of both mental and bodily powers. If the head is affected, the images presented to the imagination are frightful, vertigo and sickness are produced, and often violent convulsions. Indeed the direct and quick sedative effects of the class of poisons we are considering have made them be esteemed as narcotic, or stupifying; and the very terror of their name has hindered them from being employed,

except in diseases where all other means have failed. But let it be remembered, that the virtue of any drug is only relative, and that poisons are either good or evil according as they are applied; for direct powers, which are capable of suspending all the actions of the body, even of the heart and brain itself, are surely capable of restraining inordinate action, and therefore, of being applicable to the large and dangerous class of sthenic, or acute diseases.

Our first consideration will be that of the cicuta. There have already appeared three separate publications from Dr. Stork of Vienna on this subject; but his cases will help us very little in the present view of our subject. They at any rate shew, that these sedative poisons, blunting the sensibility of the nerves, mitigate the pain of excruciating sores*, and they may have done some service in epilepsy and mania. But we are to consider their use in sthenic diseases.

The following is one among the many cures performed by me in this way.

Samuel Parker, coachman to Mr. Mills, Lincoln's Inn, was wet through driving his master; and came, with his wet clothes on, into a hot kitchen, took a glass of spirits, and the next day felt a violent pain in the right side, and could not fetch his breath without great pain, breathing extremely difficult, and cough severe; he was so ill, that every one despaired of his recovery. He was ordered an emetic, to be taken in such small quantity at a time, as to create considerable nausea, and the following day he was to pursue the following directions:

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* The formula is,

R. Cicut. herb. exsiccat.
Chamœm. flor. sing. unc. 1.
Aq. servent. lb. 1.
Coque per sextam horæ partem, et liquori expresso, adde

Farin. Lin. semin. q. s.
Ut fiat cataplasma.

Parti dolenti calidum, et panxillo olei olivæ illinitum, applicetur et renovetur bis die.

R. Suc. cicut. spis. gr. 3.
Pulv. trag. comp. dr. 2.
Simul terantur, et in portiones sex equales dividantur; quarum sumat unam primo mane, horâ xi. matutin. et horâ somni sing. diebus.

That is, take of,
The inspissated juice of hemlock—three grains.
Compound powder of tragacanth—two drachms.
Let them be rubbed together, and divided into six equal parts, of which let one be taken early in the morning, another at eleven in the morning, and at bed time very day,—Or,

R. Suc. cicut. spissat. dr. 1.
Herb. cicut. exsiccat. in pulv. trit. q. s.
F. Pil. 30. quarum cap. duo. dein plures, aucto illarum pro re natâ numero, sing. dieb.

That is, take of,
The inspissated juice of hemlock—one drachm.
The dried powder of cicuta—as much as is sufficient.
Make into thirty pills, of which take every day two, afterwards more, increasing their quantity, as the occasion may require.

His recovery was complete.

In other cures of peripneumony, a pill of the powder of digitalis, of which one grain has been given night and morning, and the cicuta at eleven and seven in the day, have accomplished every wish.

HÆMORRHAGIES.

HÆMORRHAGIÆ.

The several species are,

Species 1. Epistaxis, *bleeding of the nose.*

OBSERVATION.

This occurs chiefly in young persons, with a sense of fulness about the head.

CURE.

It seldom requires any other means than using *less exercise*, and abstaining from *wine* and *spirituous liquors*, and eating less of animal food.

Species 2. Hæmoptysis, *spitting up*, or *coughing blood, usually preceded by a sense of titillation in the fauces.*

OBSERVATION.

The blood from the lungs is of a bright florid colour, from other parts black and grumous.

Species 3. Hæmatemesis, *vomiting up blood from the stomach.*

OBSERVATION.

The blood proceeding from the stomach is dark, and

more abundant than from the lungs, and usually the sequel of a long habit of drunkenness.

PREVENTION.

HEMORRHAGIES ARE OF TWO KINDS.

In establishing a class or order of diseases under the title of *Hemorrhagies*, Nosologists have employed the single circumstance of an effusion of red blood, as the character of such a class or order. By this means they have associated diseases which in their nature are very different; but, in every methodical distribution, such arbitrary and unnatural associations should be avoided as much as possible. Further, by that management Nosologists have suppressed or lost sight of an established and well-founded distinction of hemorrhagies into *Active* and *Passive*.

It is my design to restore this distinction; and I shall therefore here, under the title of *Hemorrhagies*, comprehend those only which have been commonly called *Active*, that is, those attended *with some degree of pyrexia;* which seem always to depend upon an increased impetus of the blood in the vessels pouring it out, and which chiefly arise from plethora, also such as arise from weakness of the tone of the vessels.

OF THE INGESTA AND EGESTA.

The fluids of the human body are in continual waste by the excretions, but are commonly replaced by the aliments

taken in; and if the quantity of aliments in any measure exceed that of the excretions, an increase of the quantity of the fluids of the body, or in other words, a plethoric state, must necessarily arise. This, to a certain degree, is requisite for the growth of the body: but, even then, if the proportion of the aliments to the excretions, be greater than is suited to the growth of the body, and more certainly still, if, after the growth is completed, when an equality between the ingesta and the excreta should be established, the disproportion still continue, a preternaturally plethoric state must arise. In both cases, it is evident, that the plethora must be prevented or corrected by adjusting the *ingesta* and *excreta* to each other; which generally may be done, either by diminishing the *ingesta*, or by increasing the *excreta*. The former may be effected by the management of *diet*, the latter by the management of *exercise*.

INGESTA, HOW TO BE MANAGED.

The *ingesta* may be diminished, either by giving aliment in less quantity than usual, or by giving aliments of a less nutritious quality; that is, aliments of a substance, which, under the same bulk and weight, contain less of a matter capable of being converted into animal fluids, and more of a matter ready to pass off by the excretions, and consequently less of a matter to be retained and accumulated in the vessels. *

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* Vide our Philosophy of Medicine, where the different degrees of digestibility in foods is ascertained. Fish, in such habits, is to be preferred to animal food.

THE EXCRETA, HOW TO BE PROMOTED.

The increasing of the *excreta*, and thereby diminishing the plethoric state of the system, is to be obtained by increasing the exercise of the body; and generally for adjusting the balance between the ingesta and excreta, and thereby obviating the plethoric state, it is necessary that exercise, in a due measure, be very constantly employed. *

EVACUANTS.—CAUTIONS AGAINST BLOOD-LETTING.

Artificial evacuations may be employed to diminish the plethoric state of the body; and when, at any time, it has become considerable, and immediately threatens a disease, these evacuations should be made to the *quantity*, that the symptoms seem to require †. But it is constantly to be

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* The exercise best adapted to these cases is such as does not heat the body too much, or increase the force of the blood. Hence riding moderately, travelling in a carriage, or sailing, are preferable to walking. Young people may use such gentle exercise as may amuse the mind, and at the same time conduce to bodily health, as some of those sports that require a gentle bodily exertion, as bowling, archery, &c.

† Brisk purges are perhaps preferable to every other mode of evacuatiug the ingesta; and in these cases we may have recourse to drastics without any apprehension of danger. The following formulæ may serve as specimens of the purges useful in these cases:

R. Pulv. Rad. Jalap.
—— Aromat. aa. dr. 1.
Confect. Amygdal. dr. 2.
Syr. simp. q. s.
M. f. Elect.

attended to, that *blood-lettings* are improperly employed to prevent a plethora, as they have a tendency to increase it; and as they require to be often repeated, and are thereby apt to induce a habit which may be attended with much danger.

METHOD OF CURE.

Having thus mentioned the means of preventing either the first attacks, or the recurrence of hemorrhagy; I must next say how it is to be managed when it has actually come on.

SOMETIMES NO REMEDY IS REQUIRED.

When an hemorrhagy has come on which appears to have arisen from a preternaturally plethoric state, or from some change in the balance of the sanguiferous system, *no mea-*

This electuary may be divided into four doses, one of which may be taken early in the morning, as occasion may require.

℞. Pilul. Aloes cum Myrrh. dr. ss.
Calomel. gr. 6.
Syr. simpl. q. s.
M. f. Massa in Pilulas equales sex dividend.

Two of these pills may be taken in the evening, and the remaining four the following morning.

℞. Resin. Jalap. scr. 1.
Tere in mortar, cum sacch. alb. dr. ss.
Amygdal. dulc. decorticat. No. 2.
Adde gradatim Aq. Cinnamon. simpl. unc. j.
M. f. haust. mane sumend.

This is a very elegant purge, and has the peculiar advantage of operating powerfully without griping or occasioning much inconvenience.

sures are to be immediately taken for suppressing it; as we may expect that, when the quantity of blood necessary for the relief of the system is poured out, the effusion will spontaneously cease *.

REMEDIES, HOWEVER, MOSTLY DEMANDED.

In many cases, however, it may be suspected, that the quantity of blood poured out is not exactly in proportion to the necessities of the system, either for relieving a general plethora or a particular congestion, but that it is often to a greater quantity than these require. This we suppose to happen in consequence of an inflammatory diathesis prevailing, and of a febrile spasm being formed; and *therefore it is in many cases proper, as well as for the most part safe, to moderate the evacuation, and, when it threatens to go to excess, to suppress it altogether.*

COLD AIR AND COLD DRINKS ADVISABLE.

An hemorrhagy may be moderated by avoiding any irritation that might concur to increase it; so that every part of the *antiphlogistic regimen* is to be observed; particularly external heat, both as it rarefies the fluids, and stimulates the solids, is to be carefully avoided: and it is probable that in all cases an hemorrhagy may be safely moderated by *cool air* applied, and *cold drink* exhibited.

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* This extraordinary doctrine was first delivered by Stahl.

ACIDS AND NITRE.

A second means for the same purpose is, the use of refrigerant medicines, and particularly of *acids** and *nitre*†.

BLOOD-LETTING RECOMMENDED.

A third means which has been frequently employed, is that of *blood-letting*. The propriety of this practice may be doubtful, as the quantity of blood poured out by the hemorrhagy may be supposed to answer the purpose of an evacuation in any other way; and I am ready to allow, that the practice has been often superfluous, and sometimes hurtful, by making a greater evacuation than was necessary or safe. At the same time, I apprehend it is not for the mere purpose of evacuating, that blood-letting is to be practised in the cure of hemorrhagy; but that it is further necessary for taking off the *inflammatory diathesis* which prevails, and the febrile spasm that has been formed. Accordingly, in the case of hemorrhagy, when the pulse is not only frequent, but

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* The Infus. Rosæ (Infusion of Roses) is a very proper acid refrigerant in most hemorrhagies. The dose of it must be proportioned to the exigency of the case; it ought never to exceed four ounces in the space of an hour; an ounce every half hour is generally sufficient: a greater quantity at a time frequently occasions pains in the bowels, and, by its irritation, increases the disease. *Lemonade* is an admirable drink: *tamarind water* is excellent, also subacid fruits, as currants.

† There are doubts respecting the *nitre*, from the experience of Dr. Percival.

quick and full, and does not become softer or slower upon the flowing of the blood, and that the effusion is profuse, and threatens to continue so, it appears to me that blood-letting may be necessary, and I have often found it useful. It seems probable also, that the particular circumstances of venesection may render it more powerful for taking off the *tension* and *inflammatory irritation* of the system, than any gradual flow from an artery. Vide, however, caution given, p. 412.

BLISTERING.

That a spasm of the extreme vessels has a share in supporting hemorrhagy, appears to me probable from hence, that *blistering* has been often found useful in moderating and suppresing the disease.

EMETICS.

Do *emetics* and *vomiting* contribute to the cure of hemorrhagy * ?

ASTRINGENTS RECOMMENDED.

When an *hemorrhagy is very profuse*, and seems to endanger life, or even threaten to induce a dangerous infirmity, it is agreed on all hands, *that it is to be immediately suppressed by every means in our power*; and particularly, that, besides the means above mentioned for moderating the disease, *astrin-*

* This is put as a query; still it is the practice of some, and is particularly recommended by Dr. Darwin, for as soon as an emetic begins to act, the hæmorrhage usually ceases. The best emetic here is a scruple of ipecacuanha and one grain of tartarized antimony, given in divided doses.

gents, internal or external, where the latter can be applied, are to be employed for suppressing it.

CHALYBEATES DOUBTFUL.

The *chalybeates*, so frequently employed, do not appear to me *to be very powerful* *.

SATURNINE MEDICINES DOUBTFUL.

The preparations of lead are certainly more so, but are otherwise of so pernicious a quality, that they should not be employed except in cases of the utmost danger. The *Tinctura Saturnina*, or *Antiphthisica*, as it has been called, appears to be of *little efficacy* †; but whether from the small portion

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* All the preparations of steel, the chief of which is the Mist. fer. c. Myrrh. are dangerous medicines, and ought to be used with the utmost caution. They do not apply to the *active*, but *passive* hæmorrhages. Of their power to do *good* or *harm*, there can be no doubt. Many hæmorrhagies have been increased by their use.

† Of the power of *lead* over this disease, there can be no doubt, and this is the most powerful *sedative* we possess.

R. Sacch. Saturni, gr. 2.
Syr. Tolut. dr. 2.
Confect. Amygdal. scr. 1.
Aq. Rosæ, unc. 1 ss.
F. Mist.

Sign.—Take, upon spitting blood, a teaspoonful, and repeat the same every ten minutes, until it stops. Repeat the same upon any return of the hæmorrhage. This applies to both passive and active hæmorrhages.

CASE.

Mr. Fox, farmer, near Kilburne, spit up near three quarts of blood:

of lead which it contains, or from the state in which the lead is in it, I am uncertain.

ALUM MUCH RECOMMENDED.

The astringent that appears to me *the most powerful*, and at the same time *the most safe*, is *alum* *.

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he took this remedy, with other means of depletion, as purging, and was perfectly recovered. Many similar cures have occurred in my practice.

* Alum frequently irritates, if given in too large doses at first, proving sometimes a purgative and sometimes an emetic. In cases of great danger, however, it must be given in large quantities, by frequently repeating small doses. *Five grains* is a sufficient dose to begin with; but it may be repeated every hour, or every half hour. Some authors have given it in doses of *a scruple* several times a day; but that is certainly too great a quantity at once.

The tincture of roses has been frequently employed with success in these cases: alum, however, as Dr. Cullen observes, is the principal astringent. It may be given, either by itself in small and often repeated doses, or combined with terra Catechu. The following formula is very convenient:

R. Alumin.
Terr. Catechu. aa dr. 1.
Conserv. Rosar. unc. 1.
M. f. Elect. cum syr. commun. q. s.

The dose ought to be proportioned to the exigency of the case: in general, the above prescribed mass may be divided into ten equal parts; one of which may be given every two hours, or, in urgent cases, every hour. In using this medicine, it will be necessary to keep the body open: but for this purpose, purgatives are ill adapted, as they carry off with them the medicine that is employed: *glysters* are therefore preferable; and in order that they may be the more effectual, they ought to be somewhat of a stimulating nature; as, (vide over-leaf).

COLD.

But the most powerful of all astringents appears to me to be *cold*, which may be employed, either by applying *cold water to the surface of the body* *, or *by throwing it into the internal parts* †.

OPIATES RECOMMENDED.

Upon occasion of profuse hæmorrhagies, *opiates* have been employed with advantage; and, when the fulness and inflammatory diathesis of the system have been previously

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R. Infus. Sennæ, unc. 6.
Magnes. vitriolat. unc. ss.
Decoct. Hordei, unc. 8.
Misce.

Or,

R. Pulp. Tamarind. unc. 2.
Crem. Tart. dr. 4.
Coque in Aq. font. q. s. ad colaturæ, unc. 12.
Adde Mann. unc. 2.
Misce.

* The hands during the hæmorrhage should be often dipped into cold water, and this frequently changed. A cold key put down the back (the larger this is the better) has done good. If the hæmorrage be great, the feet should be then immersed into two basins filled with cold water. The room should be without a fire, the bed-clothes very sparing, and all the drink and food given as cold as possible. Cold gruel is the best food, and cold toast and water.

† Perhaps Doctor Cullen means drinking of cold water. For this purpose, I have myself ordered *lemon-ice* to be taken with advantage.

taken off by the hemorrhagy itself, or by blood-letting, I think *opiates may be employed with safety* *.

LIGATURES DOUBTFUL.

For restraining hemorrhagy, ligatures have been applied upon the limbs, in the view of retarding the return of the venous blood from the extremities; but they appear to me to be of uncertain and ambiguous use, but pledgets applied to the nostrils dipped in vinegar, have done good.

FAINTINGS NOT TO BE PREVENTED.

In the case of profuse hemorrhagies, no pains are to be taken to prevent a *Deliquium Animi*, or *fainting*, as the happening of this is often the most certain means of stopping the hemorrhagy †.

GENTLE EXERCISE PROPER.

The avoiding of motion is generally a proper part of the antiphlogistic regimen; and, in the hemoptysis, nothing is more necessary than avoiding bodily exercise: but some kinds of gestation, as sailing, and travelling in an easy carriage on smooth roads, have often proved a remedy ‡.

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* *Opium*, however, ought to be cautiously employed in active hemorrhagies, which are frequently accompanied with a phlogistic diathesis; for it is well known, that in such a diathesis, opium is universally hurtful. Nothing but great want of sleep can authorize its use.

† Hence patients are not to be encouraged by *hope*; the dread and horror of death is rather to be impressed upon the mind, and nothing is to be done to rouse any one when fainting.

‡ Riding on horseback is dangerous; but the means here recommend-

II. TREATMENT OF THE PASSIVE HÆMORRHAGE.

The rupture of vessels may arise from the pressure of blood on them, or from the weakness of the pipes themselves. This last case not unfrequently occurs. In such instances, whatever tends to weaken, does harm.

CHALYBEATES AND THE PERUVIAN BARK NOT APPROVED OF.

To stop an hemoptysis, or prevent the returns of it, two medicines have been frequently employed; neither of which I can approve of. These are, *chalybeates*, and the *Peruvian bark*. As both of them contribute to increase the phlogistic diathesis of the system, they can hardly be *safe* in *any case of hemorrhagy*, and I have frequently found them hurtful.

CHALYBEATES.

In hæmatemesis, or vomiting of blood, there is the strong-

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ed should be used after the spitting of blood has subsided. A sea-voyage has often been prescribed for hemoptysis: it is, nevertheless, a very dangerous practice, on account of the violent agitation produced by the sea-sickness in the action of vomiting. The violence of the retchings, in sea-sickness, especially after the contents of the stomach are thoroughly evacuated, has been known to cause hemoptysis, by a rupture of some considerable vessel. The hemorrhagy, indeed, hence proceeding, is not an active hemorrhagy; but, nevertheless, in a phlogistic diathesis, which predisposes to an active hemorrhagy, we ought always to be cautious how we employ remedies, which, although they do not immediately increase the predisposing diathesis, produce the least irritation, or give any violent shock in their action.

Speaking loud, singing, playing on wind-instruments, and whatever requires any exertion of the lungs, ought to be carefully avoided."

est reason for believing, that the *Tinctura ferri muriatis*, (the muriated tincture of iron) is of service, as, when applied outwardly, it corrugates the vessels, and acts as a styptic. From twenty to thirty drops may be given every hour, until the hæmorrhage cease, and then repeated in some chamomile tea, or an infusion of gentian, three times a day. Another chalybeate is, the *Mistura ferri cum Myrrha*, two table spoonsful of which is given three times a day, in order to strengthen the habit.

GESTATION.

Air and gentle exercise, and moderate living, is absolutely necessary; but the best mode of exercise is that of a carriage, once a day. *

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* But this should be well hung, and care should be taken to be driven slow, and not to go over, if possible, a bad road. Some persons have found *swinging* of great advantage, moderately applied.

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN.

DR. THOMAS'S PRACTICE.

A NEW INVENTION.

In *Epistaxis*, or bleeding of the nose, the application of pressure to the mouth of the bleeding vessel is often attended with a good effect, when other means prove unsuccessful; to effect which, a piece of *hog's gut* that has been previously dried, and moistened again, may be used. One end of it being firmly tied with a bit of small packthread, is, by means of a probe, to be pushed along the course of the nostril from which the blood is discharged to the upper part. The *gut* is then to be filled with *cold vinegar and water*, by means of a *syringe* inserted at the end hanging out of the nostril, and as much being injected as the gut will admit, the whole is to be pressed up as far as possible, and to be then secured in this situation by a proper bandage*.

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* Vide Thomas's Practice of Physic, a rich mine of useful knowledge.

DR. DARWIN'S PRACTICE.

IMMERSING THE HEAD IN WATER.

Dr. Darwin mentions, in his Zoonomia, the case of a lady who had a continued hemorrhage from her nose for several days; the ruptured vessel was not to be reached by plugs up the nostrils, and the sensibility of her fauces was such, that nothing could be borne behind the uvula. After venesection, and other common applications, she was directed *to immerse her whole head in a pail of water*, which was made colder by the addition of several handfuls of *salt*; in consequence of which, the hemorrhage immediately ceased, and returned no more; but her pulse continuing hard, she was necessitated to lose blood from the arm on the succeeding day.

DOCTOR THORNTON'S PRACTICE.

A NEW INVENTION.

On a lady who was elderly, and subject to violent hæmorrhagies from the nose, I found pressure against the nostril, high up, of the greatest service, by means of the finger and thumb; but as this application could not be constant, I had a piece of cane slit, and fastened with waxed packthread at one end, and applied, like a pair of spectacles, to the nostrils; and this does good, either by pressing on the ruptured vessels, or prevents the breathing through that part, and a current of air passing across the diseased part. The coagulum is thus also better maintained.

DR. RUSH'S PRACTICE.

SALT.

We are informed by that physician, that after other means have

failed, a table-spoonful or two of common salt, diluted with a little water, has stopped hæmorrhages in a very remarkable manner.

DR. BEDDOES, AND DR. THORNTON'S PRACTICE.

DIGITALIS.

The foxglove was introduced by Dr. Beddoes, physician at the Hot Wells, Bristol, for the cure of consumption, and seeing that it moderated the action of the pulse, sinking it from 90 to even 40, without diminishing strength, I very early applied this remedy, as a cure for hæmoptoe; but it must be given in large doses, as 20 drops of the tincture, every ten minutes, until the bleeding ceases, and then continued for some time in the dose of 25 drops four times a day.

DR. HAMILTON'S PRACTICE.

ALOES AND JALAP.

CASES.

Mary Munro, ætatis 28.—Has pain and sense of weight at the scrobiculus cordis, increased on pressure. Head-ach and vertigo, vomiting of ingesta, and sometimes, by account, grumous blood, to a considerable extent, is brought up by coughing; much debility, and lowness of spirits, appetite impaired; pulse 80, skin cool, belly habitually costive, catamenia regular, and rather profuse; says she has had stomachic complaints more than a year and a half; the discharge of blood occurred first about the beginning of this winter, preceded by occasional epistaxis for a month before; has used no remedies before admission, but has taken a bolus since, which procured a dark-greenish motion.

Habeat pilulas aloeticas tres omni triborio.

19th Feb.—By account, two dark greenish-coloured stools have been passed this morning.

Continuentur pilulæ aloeticæ, ut heri præscriptum.

20th Feb.—Twelve pills taken; five copious dark greenish-coloured motions, stomachic symptoms, head-ach, and vertigo are relieved, pulse calm, no vomiting.

21st.—No stool, no vomiting, weight at epigastrium, pulse calm.

Repetantur pilulæ aloeticæ, ut supra præscriptum.

22d.—Several stools of more natural appearance; no return of vomiting, stomachic symptoms still more relieved, and expression of countenance more lively.

23d.—No stool, apparently convalescent, appetite good.

R. Sulphatis magneisæ drachmas tres,
Supertartritis potassæ drachmam unam. Misce.
Sumantur omni mane, ex aquæ unciis sex vel octo.

26th.—Bowels have been regular, appetite has continued good, and to all appearance she has been free of ailments.

Habeat pulveris jalapæ compositi uncias duas, in doses triginta duas divisas.

Signa, one each morning.

Cured.

Jean Clarkinson, ætatis 29.—Complains of a general soreness in her breast, with great oppression about the præcordia, head-ach, and some degree of languor. Says she has been affected for three years with frequent vomiting of fluid and dark-coloured blood, sometimes to the amount of a pound or more; that she has always vomited more or less every day during that time. At present she has little or no cough; but when she first became affected, she had a severe cough, with great hoarseness.

Pulse at present 66, and very weak, tongue white, belly habitually costive, appetite impaired, catamenia natural.

Attributes her complaints to carrying heavy loads of coals; has been using the pulvis cinchonæ, with porter, without relief.

29th April.—A small discharge of blood, brought up apparently without retching; no stool since admission.

Habeat statim bolum jalapæ compositum cum mercurii grauis octo, sera nocte, nisi prius soluta fuerit alvus, enema domesticum.

Juris bovini libram vel alteram indies.

30th.—General soreness of breast, oppression about præcordia, head-ach and faintness are relieved, pulse firmer, and expression of countenance more lively; a copious, fetid, dark, and greenish-coloured alvine evacuation; no vomiting.

Habeat pilulas aloeticas duodecim; sumat tres omni bihorio; et pilulis sumptis, repetatur enema, ut heri.

1st May.—Injection not given; has had two pretty copious stools, feces formed, but still of a dark and greenish colour; uneasiness of præcordia, oppression of the breast, and head-ach, are still more relieved; no vomiting.

Vespere repetatur bolus jalapæ compositus, ut supra præscriptum, et cras primo mane habeat tartritis sodæ et potassæ unciam ex aqua.

2d May.—No vomiting, in other respects free of ailment; a very copious alvine evacuation since morning, and of more natural appearance than hitherto.

Repetantur cathartica ut heri præscriptum.

3d.—Has had pretty full alvine evacuation, somewhat costive, but in colour more approaching to the natural. Is free of ailment.

Habeat pulveris jalapæ drachmas quatuor in doses octodecim divisas.

Signa, Take one occasionally.

Cured.

DOCTOR HEBERDEN'S PRACTICE.

CONDEMNS BLOOD-LETTING; RECOMMENDS PURGATIVES.

This interesting account was read before the London College of Physicians.

It has been the practice of physicians to take away blood from the arm, or foot, in order to stop violent hæmorrhagies from some other parts, which do not admit of a topical application.

If it be intended by this practice to weaken the power of the heart, and to give the lips or ends of the broken blood-vessel a chance of collapsing, or of being plugged up by means of a more languid circulation, would not all this be as likely to happen after the patient had been equally weakened by losing the same quantity of blood from the original rupture? And in the mean time he might stand a chance of its stopping spontaneously, before he was reduced to that degree of weakness.

It seems probable, from all the experience which I have had of such cases, that where the hæmorrhage proceeds from the breach of some very large vein, or artery, there the opening of a vein will not stop the efflux of blood; and it will stop without the help of the lancet, when it proceeds from a small one: in the former case, bleeding does no good; and in the latter, by an unnecessary waste of the patient's strength, it will do harm. But if the opening of a vein be intended to stop an hæmorrhage by derivation or revulsion, may it not be questioned whether this doctrine be so clearly established, as to remove all fears of hurting a person, who has already lost too much blood, by a practice attended with the certain loss of more?

The best remedies seem to be a cool air; quiet; a very sparing, mild nourishment, administered in small quantities at a time; drinks acidulated with any acids; opiates in small doses (for any strong perturbation of mind will often occasion a return of the bleeding); and lastly, keeping the body moderately open. A very experienced physician told me, that, by the help of gently purging with some of the salts, he had done more good in excessive losses of blood from the nose, than by any other means. I do not lay any great stress upon the use of internal astringent

remedies, because it does not appear likely, from reasoning, that they should do any service; and I am far from being convinced by experience, that they ever do, except perhaps in hæmorrhagies of the primæ viæ. They may sometimes have appeared to be attended with success, because there is but a very small proportion of hæmorrhagies, not owing to external violence, which would prove fatal, though no means were used to stop them; and hence it has happened, that a great number of other external and internal medicines have been very undeservedly advanced to the rank of specifics in this complaint. Saccharum Saturni has appeared to me to have the best title to be called an internal *specific:* and it is very unfortunate, that the useful quality of this, and other preparations of lead, should be joined with others of such a dangerous nature; for I hardly ever saw a case, in which the probable good to be expected from them as styptics, would counterbalance the many certain mischiefs which are expected to arise from their internal use. Vide next case.

DOCTOR THORNTON'S PRACTICE.

SACCHARUM SATURNI.

In note p. 418, I have related a case where the greatest good arose from the exhibition of the *Saccharum Saturni* (sugar of lead), and where the hæmorhage is excessive, there is no other remedy so effectual. Bleeding would add to the debility, and as the quantity of blood that may be lost is uncertain, it would be a most dangerous remedy. As far as my practice has gone, I have seen no paralysis, or injury, arise from the exhibition, and believe there is more danger from the disease than from this remedy. In this instance, I am happy to adjoin the corroborating sentiments of one of the most learned and experienced practitioners in this country; I mean Dr. Thomas, of Salisbury, who, in his inestimable work, the Modern Practice of Physic, p. 254, thus speaks of this remedy.—"The acetate of lead has been used freely, and *with great advantage*, in hæmoptysis. One grain, every four or six hours, may be employed with perfect safety. In cases attended with imminent danger, we may venture on two grains. It may be

given in an infusion of roses, with a few drops of tinctura opii." After the exhibition, I always order an aperient.

VITRIOLIC ACID.

In slight cases, I prefer the infusion of roses, adding to an ounce four drops of vitriolic acid, given at the time of hæmoptoe, and repeated four or five times a day.

DOCTOR REDFEARN'S PRACTICE.

HYDRO-CARBONATE AIR.

Letter to Dr. Beddoes.

June 26, 1795.

Dear Sir, *Lynn, Norfolk.*

I send you the case of Hæmoptysis, which I promised in my last, and you will no doubt think it an important one.

Mr. B. F——, æt. 23, of a florid complexion, narrow chest, prominent shoulders, smooth skin, and of a delicate slender form, has been afflicted with hæmoptysis about two years and an half; attended with dyspnœa, cough, a disagreeable sense of burning in the chest, and expectoration of a purulent nature. Pulse about 100, and invariably accelerated by the hydro-carbonate air.—The hectic fever was not completely formed; but he had at times a sense of chilliness in the day-time, with heat towards the evening. He began by taking one quart of hydro-carbonate, diluted with twenty-one quarts of atmospheric air, once a day. From this mixture, he experienced much vertigo during its inhalation, and two hours after dinner he suddenly became vertiginous, from which, however, he soon recovered, although a violent head-ache remained during the rest of the evening.

The following days he only inhaled one pint of hydro-carbonate, mixed with twenty quarts of common air, once a day, which generally affected him with some slight vertigo and tightness over his forehead: the hydro-carbonate was increased gradually to two quarts or more, at one dose, but I find it always necessary to begin with the original dose, where the air has been recently generated.

My patient has been persevering in this plan about three months; and has had no return of hæmorrhage; his cough and expectoration are very much diminished; sometimes he does not expectorate more than one table-spoonful in the space of three days; he has also never experienced any of the distressing heats in his chest which harassed him before the administration of the air; his dyspnœa is perfectly removed, he can ride upon horseback twelve miles without feeling much fatigue; his appetite is very good, and he sleeps well: pulse 80; he says he thinks his health is perfectly established.

I am, Sir,

Your most obedient servant,

RICHARD REDFEARN.

DR. THORNTON'S PRACTICE.

HYDRO-AZOTE.

Mr. Nivett, of Pentonville, merchant, had for many months spitting of blood. By inhaling this gas, made by burning a tea-spoonful of æther under a bell, containing four gallons of common air, and great care in diet, after other means had failed, was completely restored to health.

PULMONARY CONSUMPTION.

PHTHISIS PULMONALIS.

ORIGIN.

This disease, as appears from dissection, generally arises from suppurating tubercles.

Tubercles, says the late Dr. Stark, are found, on dissection of those who have died of this disease, of all sizes, from the smallest granules to the bigness of a horse-bean, and commonly in clusters. On cutting into them, they appear of a white, smooth, cartilaginous substance. In the smallest, no cavity or opening appears; in those farther advanced, on the cut surface, we discover small pin-holes; in those still larger are one or more cavities, containing a fluid-like pus; which being cleared off, in the bottom is perceived several small openings, or holes; through which, on pressing the tubercle, matter issued, similar to that contained in its cavity. The larger tubercles, when emptied of their contents, appear like a small capsula, into which entered a branch of the windpipe.

SYMPTOMS.

This disease, when arising from tubercles,

1. Usually commences with a slight and short cough, which becomes habitual, is often little remarked by those affected, and sometimes so little as to be absolutely denied by them.
2. At the same time their breathing becomes easily hurried by any bodily motion, their body grows leaner, and they become languid and indolent.
3. This state sometimes continues for a year, or even for two years, without persons making any complaint of it, excepting only that they are affected by cold more readily than usual, which frequently increases their cough, and produces some catarrh. This again, however, is sometimes relieved; is supposed to have arisen from cold alone; and therefore gives no alarm either to the patient or to his friends, nor leads them to take any precautions.
4. Upon one or other of these occasions of catching cold, as we commonly speak, the cough becomes more considerable; is particularly troublesome upon the patient's lying down at night, and in this state continues longer than is usual in the case of a simple catarrh. This, more especially, should call for attention, if the increase and continuance of cough come on during the summer season.
5. The cough, which comes on as has been just now described, is very often for a long time without any expectoration; but when, from repeatedly catching cold, it becomes more constant, it is then, at the same time, attended with some expectoration, which is most considerable in the mornings.

6. The matter of this expectoration becomes, by degrees, more copious, more viscid, and more opake; at length of a yellow or greenish colour, and of a purulent appearance *.

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* It has sometimes happened, that a catarrh was attended with an expectoration of a matter so much resembling pus, that physicians have been often uncertain whether it was mucus or pus, and therefore whether the disease was a catarrh or phthisis. It is often of consequence to determine these questions; and it appears to me that it may be generally done, with sufficient certainty, from the following considerations, of which each particular is not always singly decisive, but when they are taken together, can hardly deceive us.

1. From the colour of the matter; as mucus is naturally transparent, and pus always opake. When mucus becomes opake, as it sometimes does, it becomes white, yellow, or greenish; but the last-mentioned colour is hardly ever so remarkable in mucus as in pus.

2. From the consistence; as mucus is more viscid, and coherent, and pus less so, and may be said to be more friable. When mucus is thrown into water, it is not readily diffused, but remains united in uniform and circular masses; but pus, in the same circumstances, though not readily diffused, does not remain so uniformly united, and by a little agitation is broken into ragged fragments.

3. From the odour, which is seldom perceived in mucus, but frequently in pus. It has been proposed to try the odour of the matter expectorated, by throwing it upon live coals; but in such a trial both mucus and pus give out a disagreeable smell, and it is not easy to distinguish between them.

4. From the specific gravity compared with water; and, indeed it is usual for the mucus of the lungs to swim on the surface of water, and for pus to sink in it. But in this we may sometimes be deceived, as pus which has entangled a great deal of air may swim, and mucus that is free from air may sink.

5. From the mixture which is discernible in the matter brought up; for if a yellow or greenish matter appears surrounded with a quantity of

7. The whole of the matter, however, is not always at once entirely changed in this manner; but while one part of it retains the usual form of mucus, another suffers the changes now described.

8. When the cough increases, and continues very frequent through the night, and when the matter expectorated undergoes the changes I have mentioned, the breathing at the same time becomes more difficult, and the emaciation and weakness go on also increasing.

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transparent or less opake and less coloured matter, the more strongly coloured matter may be generally considered as pus; as it is not easy to understand how one portion of the mucus of the lungs can be very considerably changed, while the rest of it is very little so, or remains in its ordinary state.

6. From the admixture of certain substances with the matter thrown out from the lungs. To this purpose, we are informed by the experiments of the late very ingenious Mr. Charles Darwin: *a*. That the vitriolic acid dissolves both mucus and pus, but most readily the former: That, if water be added to such a solution of mucus, this is separated, and either swims on the surface, or divided into flocculi, is suspended in the liquor; whereas, when water is added to a like solution of pus, this falls to the bottom, or by agitation is diffused so as to exhibit an uniformly turbid liquor. *b*. That a solution of the caustic fixed alkali, after some time, dissolves mucus, and generally pus; and, if water be added to such solutions, the pus is precipitated, but the mucus is not. From such experiments, it is supposed, that pus and mucus may be certainly distinguished from each other.

7. From the expectoration's being attended with a hectic fever. A catarrh, or expectoration of mucus, is often attended with fever; but never, so far as I have observed, with such a fever as I am presently to describe as a hectic. This, in my opinion, is the most certain mark of a purulent state in some part of the body; and if others have thought

9. In the female sex, as the disease advances, and sometimes early in its progress, the menses cease to flow; and this circumstance is to be considered as commonly the effect, although the sex themselves are ready to believe it the sole cause of the disease.
10. When the cough comes, as before described, the pulse is often natural, and for some time after continues to be so; but the symptoms have seldom subsisted long before the pulse become frequent, and sometimes to a considerable degree, without much of the other symptoms of fever.

HECTIC FEVER DESCRIBED.

11. At length, however, evening exacerbations become remarkable; and, by degrees, the fever assumes the exquisite form of hectic.
12. A hectic fever has the form of a remittent, which has exacerbations twice every day.
13. The first of these occurs about noon, sometimes a little sooner or later; and a slight remission of it happens about five in the afternoon.
14. This last is soon succeeded by another exacerbation, gradually increasing till after midnight; but after two o'clock in the morning, a remission takes

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differently, I am persuaded that it has been owing to this, that, presuming upon the mortal nature of a confirmed or purulent phthisis, they have considered every case in which a recovery happened, as a catarrh only; but that they may have been mistaken in this, will be shown hereafter.

place, which becomes more and more considerable as the morning advances.

15. The exacerbations are frequently attended with some degree of cold shivering; or, at least, the patient is exceedingly sensible to any coolness of the air, seeks external heat, and often complains of a sense of cold, when, to the thermometer, his skin is preternaturally warm. Of these exacerbations, that of the evening is always the most considerable.

It has commonly been given as a part of the character of a hectic fever, that an exacerbation of it commonly appears after the taking food; and it is true that dinner, which is taken at noon, or after it, does seem to occasion some exacerbation.

But this must not make us judge the mid-day exacerbation to be the effect of eating only; for I have often observed it to come on an hour before noon, and often some hours before dinner; which, in this country at present, is not taken till some time after noon.

It is indeed to be observed, that in almost every person, the taking food occasions some degree of fever: but I am persuaded this would not appear so considerable in a hectic, were it not that an exacerbation of fever is present from another cause; and accordingly, the taking food in the morning has hardly any sensible effect.

I have thus described the general form of hectic fever; but many circumstances attending it, are further to be taken notice of.

16. The fever I have described does not commonly sub-

sist long, till the evening exacerbations become attended with sweatings; which continue to recur and to prove more and more profuse, through the whole course of the disease.

17. Almost from the first appearance of the hectic, the urine is high-coloured, and deposits a copious branny red sediment, which hardly ever falls close to the bottom of the vessel.

18. In the hectic, the appetite for food is generally less impaired than in any other kind of fever.

19. The thirst is seldom considerable; the mouth is commonly moist; and as the disease advances, the tongue becomes free from all fur, appears very clean; and in the advanced stages of the disease, the tongue and fauces appear to be somewhat inflamed, and become more or less covered with aphthæ.

20. As the disease advances, the red vessels of the adnata of the eye disappear, and the whole of the adnata becomes of a pearly white.

21. The face is commonly pale; but, during the exacerbations, a florid red, and an almost cirumscribed spot, appear on each cheek.

22. For some time, in the course of a hectic, the belly is bound; but in the advanced stages of it, a diarrhœa almost always comes on, and continues to recur frequently during the rest of the disease, alternating, in some measure, with the sweatings mentioned above.

23. The disease is always attended with a debility, which gradually increases during the course of it.
24. During the same course, an emaciation takes place, and goes to a greater degree than in almost any other case.
25. The falling off of the hairs, and the adunque form of the nails, are also symptoms of the want of nourishment.
26. Towards the end of the disease, the feet are often affected with œdematous swellings.
27. The exacerbations of the fever are seldom attended with any head-ache, and scarcely ever with delirium.
28. The senses and judgment commonly remain entire to the very end of the disease; and the mind, for the most part, is confident and full of hope.
29. Some days before death, a violent purging comes on, the legs swell, the cough stops, the matter is accumulated, and the patient dies suffocated.

MORTALITY OF THIS DISEASE. BY DR. BEDDOES.

The Rev. William Gorsuch, by keeping a register for ten years, at Shrewsbury, discovered that the number of deaths from consumption was, in his parish, somewhat more than one in four. "By favour of a friend, I possess," says the philanthropic Dr. Beddoes, "the abstract of a similar register for one of the parishes in Bristol, where the pastor has been commendably attentive to the enumeration of his flock. By inquiry from house to house, he found the popu-

lation to be about 10,000. The following table shews the mortality, registered under the heads *decline* and *consumption*. But it is to be observed, that the same sources of inaccuracy exist here as in the London accounts. The persons (mostly of the lower class) who report the deaths, refer every complaint of slow progress, and attended with emaciation, to consumption or decline. Consequently, the number under this head is greater than of those whom real phthisis pulmonalis cuts off. Many also are interred at different burying-places, and of course not registered. But there is no reason why the latter circumstance should be supposed to affect the proportions.

Years.	*Total Deaths.*	*By Consumption or Decline.*
1790	158	56
1791	202	104
1792	215	90
1793	235	107
1794	213	108
1795	215	127
1796	216	91
	1511	683

What may be collected from private practice, does not, I believe, in any respect, tend to invalidate the conclusion deducible from these statements.

The disease is seen sometimes to perform an operation

more severe than that of decimation, leaving alive one or two members only out of a large family. I was not long since consulted for a phthisical girl, who had lost six (that is to say, all) her brothers and sisters, in the same way. There lies before me a letter, describing the phthisical symptoms of a young person (the last of his name) and containing a list of father, mother, two sisters, and a first cousin, who, in consequence of similar attacks, had followed one another to the grave in the space of about five years. These are far from being all the instances I have known; and scarce a physician of moderate experience but must have met with instances equally deplorable.

Could a general assembly of British parents be convened for the mutual communication of family disasters, originating in this source, how many thousands might, with very little variation, adopt the language of Nestor, when he speaks of the havoc occasioned among the Greeks, by the war at Troy!

——————— καλεσσαθεν ὁσσοι ἀριστοι·
Ενθα μεν Αιας κειται ἀρηιος, ἐνθα δ' Αχιλλευς,
Ἐνθα δε Πατροκλος, θεοφιν μησωρ ἀταλαντος
Ἐνθα δ' εμος φιλος υιος.———————

Shall I the dire distressful scenes review,
And open all a parent's grief anew?
Trace the long roll of death, and, sorrowing, tell
How, mark'd by fate, the best and loveliest fell?
* * * * * * * * *
* * * * * * * * *

There Ajax huge, Achilles there the brave,
And young Patroclus found an early grave;
There too my child———

FEELING DESCRIPTION OF THIS DISEASE, BY DR. BEDDOES.

The fatality and frequency of consumption are better understood than its severity. Writers of romance (whether from ignorance, or because it suits the tone of the narrative) exhibit the slow decline of the consumptive as a state on which the fancy may agreeably repose, and in which not much more misery is felt than is expressed by a blossom, nipped by untimely frosts. Those who only see the sufferers in passing, are misled by the representation. And I have heard many persons thus prepossessed, after closely attending a sick friend, declare their surprise not less than their horror, at the unexpected scenes of varied and protracted misery which they have been condemned to witness.

To lead the imagination through some of these scenes, might have its use in creating a salutary alarm. But I feel myself totally unequal to the task. I do not speak, says Dr. Beddoes, of the difficulty of noting down the obvious sensible tokens by which the calm practitioner of medicine may recognise the complaint in its various stages —this is easy enough, and authors do it every day, as monks count their bead-roll: but of the difficulty of bringing out all the patient's feelings into distinct relief, and delineating a picture which a parent, fresh from the loss of a child, shall acknowledge.

Consumption is thus elegantly and feelingly described by Dr. Beddoes, the short teazing cough at first, provoked by incessant tickling in the throat, as if the minute fragment of some extraneous body had immoveably fixed itself there; the subsequent hard rending cough, attended sometimes by retching and vomiting, sometimes by stitches which necessitate the most violent struggle against the continued solicitation to cough, and severely punish a moment of inattention; the expectoration sometimes nauseous, always offensive to the eye, and harassing when it is not free; the languor with which the patient finds himself overpowered, when his attention is not occupied by some among his various fixed or flying pains; the extremes of cold and heat through which he is carried by the daily returns of hectic; the sweats in which his repose by night drenches him; the breathlessness, on motion or without motion, arising by degrees to a sense of drowning, and terminating in actual drowning, when there is no longer strength to bring up the fluids, secreted in the chest; the disorder in the bowels, towards the last always threatening, and finally unrestrainable, while it cuts off those indulgencies which the very thirst it creates or aggravates impatiently demands: these are but a part of the torments under which the physician, during his transient visit, in an immense majority of instances, sees the consumptive labouring. And what are the few minutes of a physician's call, compared to the whole twenty-four hours, lengthened out as they often are to the tenants of the sick chamber, by pain and incapability of amusement on one side, and by tender concern on the other?

Into the catalogue of evils flowing from any cause, those

that affect the bye-standers should be received, as well as those that affect the principal party. Thus in the early stage of consumption, how painful must it be to perceive female delicacy, vainly struggling against an increasing and inexorable disease, and to have the avowal extorted partly by affectionate urgency, partly by distress! After the full disclosure is made, how horrible (according to circumstances and the character of the medical attendant) for the parent to listen to his frank explanation, to search for the hidden meaning of the looks, or to pierce through the clumsy dissimulation! The despondence which (whatever is said to the contrary) the sick not unfrequently express, is miserable. The sanguine hope which an hour of sunshine commonly excites, is more miserable still. What is worst perhaps, is the knowledge of the patient's insecurity, during these intervals of ease! The storm of symptoms, that has so often broken in at once upon the most apparent settled calm, allowing the watchful friends no respite from their anxiety. And how shocking at last (under a consciousness that the event will give the heart a blow from which it can never fully recover) to be driven to call upon death to close the long series of sufferings!

PHTHISIS, PERHAPS, NOT AN INCURABLE DISEASE. CULLEN.

From what has been said, it will readily appear, that the cure of the *phthisis pulmonalis* must be exceeding difficult; and that even the utmost care and attention in the employment of remedies, have *seldom succeeded.* It may be doubtful whether this failure is to be imputed to the *imperfection of*

our art, or *to the absolutely incurable nature of the disease.** I am extremely averse in *any case* to admit of the *latter supposition*, and can always readily allow of the *former*; but, in the mean time, must mention here, what has been attempted towards either curing or moderating the violence of this disease.

PREVENTION CHIEFLY TO BE AIMED AT.

It must be obvious, that according to the different circumstances of this disease, the method of cure must be different. Our first attention should be employed in watching the approach of the disease, and preventing its proceeding to an incurable state.

In all persons of a phthisical habit, and especially in those born of phthisical parents, the slightest symptoms of the

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* That it is *curable*, I am happy to bear testimony in my own case and in that of many of my patients. Vide Improvements since the time of Dr. Cullen, p. 459. This was also the case with that very ingenious and learned physician Sir Edward Wilmot, who, as he told me, when he was a youth, was so far gone in a consumption, that the celebrated Dr. Radcliffe, whom he consulted, gave his friends no hope of his recovery: yet he lived to be above ninety years old. A youth of sixteen, after having the usual signs of a phthisis for many months, and being apparently in the last stage of it, was almost suffocated by bringing up at once a great quantity of matter, and, after a few days, the bag, in which it had probably been contained. He soon recovered his flesh and strength, became a strong man, and lived to old age, with a family of robust children and grandchildren; yet he was remarkably subject to a cough upon every slight cold, and had returns of spitting of blood several times every year. Vide Heberden's Commentaries, p. 379.

approach of phthisis, at the phthisical period of life,* ought to be attended to.

HEMOPTYSIS TO BE CAREFULLY ATTENDED TO.

When an *hemoptysis* occurs, though it be not always followed with ulceration and phthisis, these however are always to be apprehended; and every precaution is to be taken against them. This is especially to be done, by employing every means of moderating the hemorrhagy, and of preventing its return, directed in page (430), and these precautions ought to be continued for several years after the occurrence of the hemoptysis.

PNEUMONIA AN OBJECT ALSO OF GREAT ATTENTION.

The phthisis which follows a suppuration from the *pneumonic inflammation*, can only be prevented with certainty, by obtaining a resolution of such inflammation.†

CATARRHS TO BE OBJECTS ALSO OF MUCH CONSIDERATION.

I have said, it is doubtful if a *genuine catarrh* ever produces a *phthisis;* but have allowed that it *possibly may:* ‡

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* This period is from 16 to 21.

† This disorder often lays the foundation of consumption, if ill-cured. A galloping consumption is only a consumption and pneumonia combined.

‡ I have no doubt of this being the most frequent cause of consumption. I have seen it in some hundred instances. The learned Dr. Heberden relates the following case. A young man of eighteen, together with a cough had a spitting of blood, a shortness of breath, vomiting, pains in the side, night sweats, and was much wasted for two

and both upon this account, and upon account of the ambiguity which may arise, whether the appearing catarrh be a primary disease, or the effect of a tubercle, I consider it as *of consequence to cure a catarrh as soon as possible after its first appearance.* More especially when it shall linger, and continue for some time, or shall, after some intermission, frequently return, the cure of it should be diligently attempted.

ASTHMAS OUGHT TO BE CURED IF POSSIBLE.

The preventing of a phthisis from *asthma*, must be, by curing, if possible the asthma, or at least by moderating it as much as may be done: and as it is probable that asthma occasions phthisis, by *producing tubercles*, the measures necessary for preventing phthisis from asthma, will be the same with those necessary in the case of tubercles, which I am now about to mention. *

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years; but with these complaints his pulse was hardly quicker than it should be, and in three years he had perfectly recovered his health. Nor is this the only instance of the kind, of which I have been a witness. I impute the cure not to any medicine, but rather to the patient's constitution, which was neither scrofulous, nor derived from consumptive parents; and therefore the hurt done to his lungs by a violent cold, which he had catched, might be considered in the same light with a wound made in the lungs of a healthy man; which, though it be attended with many consumptive symptoms, yet we know by experience may be healed, and the health restored. Something of the same kind is observable in peripneumonies, from which after great inflammation, and cough, and spitting of blood, many have perfectly recovered.

* The sequel of asthma is generally dropsy of the chest, although it sometimes terminates in consumption.

TUBERCLES THE COMMON CAUSE OF PHTHISIS.

I consider *tubercles* as by much the most frequent cause of phthisis; and even in many cases where this seems to depend upon hemoptysis, catarrh, or asthma, it does however truly arise from *tubercles.* * It is upon this subject, therefore, that I shall have occasion to treat of the measures most commonly requisite for curing phthisis.

AN EARLY ALARM NECESSARY.

When, in a person *born of phthisical parents*, of *a phthisical habit*, at the *phthisical period of life*, the symptoms, mentioned before, in the *spring*, or beginning of *summer*, shall appear in the *slightest degree*, we may presume that a *tubercle*, or *tubercles*, either have been formed or are forming in the lungs; and therefore, that every means we can devise for preventing their formation, or for procuring their resolution, should be employed immediately, even although the patient himself should overlook or neglect the symptoms, as imputing them to accidental cold.

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* Although here Dr. Cullen makes the cause of consumption to arise from *Tubercles* alone, 1. *Phthisis tuberculosa*, in his Nosology, however, he admits of other causes, as, 2. *Phthisis sicca*, with a dry cough; here we find a *vomica*, or a collection of matter in a sack has burst. 3. *Phthisis hæmoptica*, Phthisis from the breaking of a blood-vessel. 4. *Phthisis calculosa*, where calculous matter is coughed up. 5. *Phthisis peripneumonia*, Phthisis after peripneumony. 6. *Phthisis asthmatica*, Phthisis from asthma; to which we might add, 7. *Phthisis ab hydatibus*, from hydatids, which I have seen coughed up; and, 8. *Phthisis pituitosa*, catarrhal consumption, a morbid secretion from the lungs, a curable and the common consumption.

THE INFLAMMATION OF TUBERCLES TO BE AVOIDED.

Such appears to me to be the present state of our art, with respect to the cure of tubercles; but *I do not despair of a remedy for the purpose being found hereafter.* In the mean time, all that at present seems to be within the reach of our art, is to take the measures proper for avoiding *the inflammation* of *tubercles.* It is probable that tubercles may subsist long without producing any disorder; and I am disposed to think, that Nature sometimes resolves and discusses tubercles which have been formed; but that Nature does this only when the tubercles remain in an *uninflamed* state; and therefore, that the measures necessary to be taken, are chiefly those *for avoiding the inflammation of the tubercles.*

BLOOD-LETTING AND A MILK DIET NECESSARY.

The inflammation of a tubercle of the lungs is to be avoided upon the general plan of avoiding inflammation, by *blood-letting,* * and by an *antiphlogistic regimen;* the chief part of which, in this case, is the use of a *low diet.* This supposes a total abstinence from animal food, and the using of vegetable food, almost alone: but it has been found, that it is not necessary for the patient to be confined to vegetables of the weakest nourishment, it being sufficient, that the farinacea be employed, and together with these, *milk.* †

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* The inhalation of a reduced air has in my practice proved far more salutary than *bleeding.*

† In those cases where the milk does not sit easy on the stomach, it should be mixed with water, or it should be taken without its cheesy or

MUCH SPEAKING TO BE AVOIDED, ALSO STOOPING, AND, LASTLY, COLD APPLIED TO THE LUNGS OR SURFACE.

A second means of preventing the inflammation of the tubercles of the lungs, is, by avoiding any particular irritation of the affected part which may arise from any *violent*

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oily parts, as in whey, or butter-milk, or it should be taken without skimming; for there are cases in which milk will agree with the stomach in this state, and in no other. The oil of the milk probably helps to promote the solution of its curds in the stomach. It is seldom in the power of physicians to prescribe asses' or goats' milk in this disorder; but a good substitute may be prepared for them by adding to cows' milk a little sugar, and a third or fourth part of water, or of a weak infusion of tea. The vegetables which are eaten in this state of the disorder, should contain as little stimulus as possible. It would seem as if the moderate portion of saccharine matter which is contained in certain fruits, such as strawberries, grapes, and sweet apples, were peculiarly agreeable and useful, for each of these fruits has been said to have cured consumption. In those cases where the stomach is disposed to dyspepsia, a little animal food, also soft boiled eggs, may be taken with safety, mixed with vegetable aliment. Where there is no morbid affection of the stomach, I have seen the white meats eaten without increasing the inflammatory symptoms of the disease. The transition from a full diet to milk and vegetables should be gradual, and the addition of animal to vegetable aliment, should be made with the same caution. From the neglect of this direction, much error, both in theory and practice, has arisen in the treatment of consumptions.

In every case it will be better for the patient to eat four or five, rather than only two or three meals in a day. A less stimulus is by this means communicated to the system, and less chyle is mixed with the blood in a given time. Of so much importance do I conceive this direction to be, that I seldom prescribe for a chronic disease of any kind without enforcing it.

*exercise of respiration;** from any considerable degree of *bodily exercise;* from *any position* of the body, which straitens the capacity of the thorax; and, lastly, from *cold* applied to the surface of the body, which determines the blood in greater quantity to the internal parts, and particularly to the lungs.

COLD FURTHER CONSIDERED.

From the last mentioned consideration, the application of *cold* in general, and therefore the winter season, in *cold climates,* as diminishing the cutaneous perspiration, is to be avoided; but more particularly, that application of *cold* is to be shunned that may suppress perspiration, to the degree of occasioning *a catarrh,* which consists in an *inflammatory determination to the lungs,* and may *therefore most certainly produce an inflammation of the tubercles there.* †

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* Cicero quitted the bar to cure a tendency to consumption. Preachers often fall martyrs to this disease.

† Cold and dry air, when combined with the exercise of *walking,* deserves to be mentioned as an antiphlogistic remedy. I have repeatedly prescribed it in this species of the consumption with advantage, and have often had the pleasure of finding a single walk of two or three miles in a *clear, cold day,* produce nearly the same diminution of the force and frequency of the pulse, as the loss of six or eight ounces of blood.

Travelling in the summer *northwards,* as to Scotland, has, on the contrary, often cured consumption, and in the winter *southwards,* from the law in the animal economy. The choice of a right air, is of great importance. Vide note*, p. 455. Going to *Lisbon* has been the destruction of thousands.

WARM CLOTHING AND EXERCISE RECOMMENDED.

A third means of avoiding the inflammation of the tubercles of the lungs, consists in diminishing the determination of the blood to the lungs, by supporting and increasing the determination to the surface of the body; which is to be chiefly and most safely done by *warm clothing**, and the frequent use of the *exercises of gestation*.

SAILING PREFERRED TO EVERY OTHER MODE OF EXERCISE.

Every mode of gestation has been found of use in phthisical cases; but riding on horseback, as being accompanied with a great deal of bodily exercise, is less safe in persons liable to an *hemoptysis*. Travelling in a carriage, unless upon very smooth roads, may also be of doubtful effect; and all the modes of gestation that are employed on land, may fall short of the effects expected from them, because they cannot be rendered sufficiently constant; and therefore it is that *sailing*, of all other modes of *gestation*, is the most effectual in pneu-

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* This is a most essential part in the cure of phthisis, and many other diseases prevalent in cold climates. The warm clothing that is most effectual is flannel shirts, or fleecy hosiery, to be worn next the skin. It feels a little disagreeable at first to a person unaccustomed to it; but the great relief it affords, and the comfortable sensation it produces, are so strong inducements for continuing its use, that few people who have once experienced its beneficial effects, can have any desire to relinquish it at any period of the year.

monic cases, as being both the smoothest and most constant. *

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* Doctor Beddoes having started a theory of the blood being *superoxygenated* in consumption, a different theory of the benefit from a sea-voyage has been started.

Letter from Mr. Scott *to* Dr. Beddoes.

Bombay, May 4, 1796.

Dear Sir,

I have lately met with a case which is a confirmation of your opinion regarding the phthisis pulmonalis, and its method of cure. A lieutenant in the Bombay marine was lately, at Bengal, so ill of a complaint which every body believed to be a consumption, that for a long time he was incapable of doing his duty, and given over as incurable. In this hopeless situation it became necessary to him to proceed to Bombay. During the passage the bilge water of the ship got at some sugar with which she was laden; which, from its decomposition, was supposed to have injured very much the purity of the air. Below decks the air certainly became very impure; which at first induced this gentleman to remain above but he one day, on going down below, observed that his respiration went on much more easily than on deck. He soon fell into a sound sleep in this new situation; and from that time he remained below in this atmosphere, from which he continued to feel relief. His health afterwards daily improved; and he is at this moment in good health, and doing his duty at sea.

I remain, Sir, &c.

W. Scott.

Sailing, so as to be out at sea for some months, has been tried by some for whom I have been consulted, and they have thought it useful. However, it has failed in others; and I can go no further in its commendation, than to say, that consumptive patients have borne it well, even those whose principal symptom was a spitting of a great quantity of blood; which complaint has not been in the least aggravated by a voyage of six weeks, notwithstanding the sea-sickness was so great, as to make the patient vomit excessively during the whole time. Vide Heberden's Commentaries, p. 383.

SEA AIR NOT THE CAUSE.

It has been imagined, that some benefit is derived from the state of *the atmosphere upon the sea;* but I cannot find, that any impregnation of this which can be supposed to take place, can be of service to phthisical persons. It is however probable, that frequently some benefit may be derived from the more moderate temperature and greater purity of the air upon the sea.*

BLISTERS AND ISSUES RECOMMENDED.

In order to take off any inflammatory determination of the blood into the vessels of the lungs, *blisters* applied to some part of the thorax may often be of service;† and for

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* The reverse is the case; for consupmptive patients require moist, damp air, an air with less of the exciting principle, *oxygen*, as the moist air of Cambridge, or Devonshire, and feel worse in elevated situations. In fenny countries consumptions are rare. I was myself cured of a consumption by a knowledge of this fact. Students, with weak lungs, are obliged to go to Cambridge instead of Oxford; and in fenny countries few die of consumption. Dr. Cowan, who long practised in Holland, says, consumptions are very rare in that moist country. It is common in France to lodge phthisical patients in cow-houses, on the supposition, that the sweet breath of the cow is healing and balsamic. "*L'air des etables de bêtes á cornes,*" says Dr. Metherie, "*est assez pur pour que la medicine ait cru pouvoir le conseiller dans les maux de poitrine.*" But if it be beneficial, is not the effect much more probably owing to the subtraction of oxygen by the respiration of the animals?

† After blistering a Burgundy pitch plaster should be put on the chest, and an hare-skin worn at the part.

the same purpose, as well as for moderating the general inflammatory state of the body, *issues* of various kinds may be employed with advantage *.

AN INCIPIENT PHTHISIS SELDOM ATTENDED TO.

The several measures to be pursued in the case of what is properly called an *Incipient Phthisis*, have now been mentioned; but they have seldom been employed in such cases in due time, and have *therefore*, perhaps, seldom proved effectual. It has more commonly happened, that after some time, an inflammation has come upon the tubercle, and *an abscess has been formed*, which opening into the cavity of the bronchiæ, has produced an ulcer, and a *confirmed phthisis*.

SECOND STATE INCURABLE AS RELATES TO THE PRESENT KNOWLEDGE OF MEDICINE.

In this state of matters, some new indications may be supposed to arise; and indications for preventing *absorption*, for preventing *the effects of the absorbed matter upon the blood*, and *for healing the ulcer*, have been actually proposed. I cannot find, however, that any of the means proposed for executing these indications, are either *probable* or have *proved effectual.* † If, upon some occasions, they have appeared to be useful, it has been probably by answering some other intention.

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* I have always thought that issues do harm, by weakening the constitution.

† I should hope this is not the fact. Vide Improvements,† p. 459.

THE SAME PLAN RECOMMENDED IN THIS SECOND STAGE, AS IN THE FIRST.

While no antidote against the poison which especially operates here, seems to have been as yet found out, it appears to me, that *too great a degree of inflammation* has a great share in preventing the healing of the ulcer which occurs; and such inflammation is certainly what has a great share in urging on its fatal consequences. The only practice, therefore, which I can venture to propose, is the same *in the ulcerated* as in *the crude state of a tubercle*; that is, the employment of means for moderating *inflammation*, which have been already mentioned.

BALSAMS AND MYRRH CONDEMNED.

The *balsamics*, whether natural or artificial, which have been so commonly advised in cases of phthisis, appear to me to have been proposed upon no sufficient grounds, and to have proved *commonly hurtful*. The resinous and acrid substance of *myrrh*, lately recommended, has not appeared to me to be of any service, and in some cases to have proved hurtful. *

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* However just the complaints of Dr. Fothergill may be against the use of balsams in the inflammatory and mixed states of consumption, I am satisfied that they are not only safe, but useful likewise in mitigating the symptoms of weak morbid action in the arterial system. I have therefore frequently prescribed the balsam of copaivæ, of Peru, the oil of amber, and the different preparations of turpentine and tar in moderate doses with obvious advantage. Garlic, Elixir of vitriol, the juice of dandelion, a strong tea made of horehound, and a decoction of

MERCURY CONDEMNED.

Mercury, so often useful in healing ulcers, has been speciously enough proposed in this disease; but whether that it be not adapted to the particular nature of the ulcers of the lungs occurring in phthisis, or that it proved hurtful because it cannot have effect, without exciting such an inflammatory state of the whole system, as, in a hectic state, must prove very hurtful, I cannot determine; *upon many trials which I have seen made, it has proved of no service, and commonly has appeared to be manifestly pernicious.* †

PERUVIAN BARK ALSO CONDEMNED.

The *Peruvian bark* has been recommended for several purposes in phthisical cases, and is said, upon some occasions, to have been useful: but I have seldom found it to be so; and as by its tonic power it increases the phlogistic diathesis of the system, I have frequently found it hurtful. In some

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the inner bark of the wild cherry tree;* also bitters of all kinds, have all been found safe and useful tonics in this state of consumption. Even the Peruvian bark and the cold bath, so often and so generally condemned in consumptions, are always innocent and frequently active remedies where there is a total absence of inflammatory diathesis in this disorder. Vide amongst Improvements, my practice with these conjoined with the inhalation of a reduced atmosphere.

† This should be particularly attended to, as in all cases I have seen mercury has done great harm; and not unfrequently the cause of a true consumption might be traced to the use of this destructive mineral.

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* Prunus Virginiana.

cases, where the morning remissions of the fever were considerable, and the noon exacerbations well marked, I have observed the Peruvian bark given in large quantities, have the effect of stopping these exacerbations, and at the same time of relieving the whole of the phthisical symptoms: but in the cases in which I observed this, the fever showed a constant tendency to recur; and at length the phthisical symptoms also returned, and proved quickly fatal. *

VEGETABLE ACIDS APPROVED.

Acids of all kinds, as antiseptic and refrigerant, are useful in cases of phthisis; but the native acid of vegetables † is more useful than the fossil acids, as it can be given in much larger quantities, and may also be given more safely than vinegar, being less liable to excite coughing.

DEMULCENTS NOT FOUND OF SERVICE.

Though our art can do so little towards the cure of this disease, we must, however, palliate the uneasy symptoms of it as well as we can. The symptoms especially urgent, are the *cough* and *diarrhœa*. The cough may be in some measure relieved by demulcents; but the relief obtained by these is imperfect and transitory, and very often the stomach is dis-

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* Opposed to this, we shall refer the reader to Dr. Heberden's Practice, p. 465 of this Work.

† Oranges are excellent, as well as grapes, &c.

turbed by the quantity of oily, mucilaginous, and sweet substances, which are on these occasions taken into it.*

OPIATES TO BE GIVEN.

The only certain means of relieving the *cough*, is by employing *opiates*. These, indeed, certainly increase the phlogistic diathesis of the system; but commonly they do not so much harm in this way, as they do service by quieting the cough and giving sleep. They are supposed to be hurtful by checking expectoration: but they do it for a short time only; and, after a sound sleep, the expectoration in the morning is more easy than usual. In the advanced state of the disease, *opiates* seem to increase the sweatings that occur; but they compensate this, by the ease they afford in a disease which *cannot be cured*.†

HOW THE DIARRHŒA IS TO BE TREATED.

The *diarrhœa* which happens in the advanced state of this

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* These certainly relieve, and keep up hope. Vide our observations on catarrh, for some excellent Formulas.

† We have before combatted the opinion of this disease being incurable; and as respects the opiate to be given at night occasionally to procure a good night, the best form is the Storax pill combined with more opium.

℞. Pil. e styrace. gr. 2.
Opii purif. gr. ss.
Ft. pil. horâ somni sumend.

disease, is to be palliated by different astringents, mucilages, and opiates. *

RHUBARB CONDEMNED.

Rhubarb, so commonly prescribed in every diarrhœa, and all other purgatives, are extremely dangerous in the colliquative diarrhœa of hectics.

GRAPES AND CURRANTS RECOMMENDED.

Fresh subacid fruits, supposed to be always laxative, are often in the diarrhœa of hectics, by their antiseptic quality, very useful. The diet should be arrow-root, rice-gruel, rice-puddings, and other articles of an astringent nature.

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* As R. Tinct. Catechu. dr. 1.
Pulv. Tragacanth, c. dr. 1.
Mist. Cretæ. unc. 1.
Aq. Cinnam. dr. 3.
Ft. Haust. ter die sumend.

Or, the Mist. cretæ c. opio, unc. 1.
Aq. Cinnam, dr. 4.
Ft. Haust. 4tâ quâque horâ sumend. vel post singulas sedes liquidas.

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN.

DOCTOR RUSH'S PRACTICE.

THE COLD-BATH, STEEL, BARK, AND EXERCISE.

THE symptoms, which mark the first stage of this disease, are too seldom observed; or if observed, they are too often treated with equal neglect by patients and physicians. I shall briefly enumerate these symptoms. They are a slight fever increased by the least exercise,—a burning and dryness in the palms of the hands, more especially towards evening,—rheumy eyes upon waking from sleep,—an increase of urine,—a dryness of the skin, more especially of the feet in the morning,—(the three last-mentioned symptoms are taken notice of by Dr. Bennet, in his treatise upon the Nature and Cure of the consumption as *precursors* of the disorder. Dr. Boerhaave used to tell his pupils that they had never deceived him.)—an occasional flushing in one, and sometimes in both cheeks,—a hoarseness *—a slight or acute pain in the breast,—a fixed pain in one side, or shooting pains in both sides,—

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* I have seen the *hoarseness* in one case the first symptom of approaching consumption. In this symptom it preserves the analogy of pneumony, which often comes on with a hoarseness, and sometimes with paraphonia.

head-ach,—occasional sick and fainty fits,—a deficiency of appetite, and a general indisposition to exercise or motion of every kind.

It would be easy for me to mention cases in which every symptom that has been enumerated has occurred within my own observations. I wish them to be committed to memory by young practitioners; and if they derive the same advantages from attending to them, which I have done, I am sure they will not regret the trouble they have taken for that purpose.

The remedies for consumption in this stage of the disorder are *simple* and *certain*. They consist, in a desertion of all the remote, and exciting causes of the disorder, particularly sedentary employments, damp or cold situations, and whatever tends to weaken the system. When the disease has not yielded to this desertion of its remote and exciting causes, I have recommended the *cold bath*, *steel*, and *bark* with great advantage. However improper or even dangerous these remedies may be after the disease assumes an inflammatory or hectic type, and produces an affection of the lungs, they are perfectly safe and extremely useful in the state of the system which has been described. The use of the *bark* will readily be admitted by all those practitioners who believe the pulmonary consumption to depend upon a scrophulous diathesis. Should even the lungs be affected by scrophulous tumours, it is no objection to the use of the *bark*; for there is no reason why it should not be as useful in scrophulous tumours of the lungs, as of the glands of the throat, provided it be given before those tumours have produced inflammation; and in this case, no prudent practitioner will ever prescribe it in scrophula when seated even in the external parts of the body. To these remedies should be added a diet moderately stimulating, and gentle exercise.

I subscribe, from what I have observed, to the bold declaration of Dr. Sydenham, in favour of the efficacy of *riding on horseback*, in the cure of consumption. I do not think the existence of ulcers, or even tubercles in the lungs, when recent, or of a moderate size, the least objection to the use of this excellent remedy. Ulcers in the lungs are not necessarily fatal, and tubercles have no malignity in them which should render their removal impracticable by this species of exercise. The first question, therefore, to be asked by a physician who visits a

patient in this disorder should be, not as to what is the state of his lungs, but is he able to ride on horseback.

There are two methods of riding for health in this disorder. The first is by short excursions; the second is, by long journeys. In slight consumptive affections, and after a recovery from an acute illness, short excursions are sufficient to remove the existing debility; but in the more advanced stages of consumption, they are seldom effectual, and frequently do harm by exciting an occasional appetite without adding to the digestive powers. They moreover keep the system constantly vibrating by their unavoidable inconstancy, between distant points of tone and debility*, and they are unhappily accompanied at all times from the want of a succession of fresh objects to divert the mind, by the melancholy reflection that they are the sad but necessary conditions of life.

In a consumption of long continuance or of great danger, long journeys on horseback are the most effectual modes of exercise. They afford a constant succession of fresh objects and company, which divert the mind from dwelling upon the danger of the existing malady; they are moreover attended by a constant change of air, and they are not liable to be interrupted by company, or transient changes in the weather, by which means appetite and digestion, action and power, all keep pace with each other. It is to be lamented that the use of this excellent remedy is frequently opposed by indolence and narrow circumstances in both sexes, and by the peculiarity of situation and temper in the female sex. Women are attached to their families by stronger ties than men. They cannot travel alone. Their delicacy, which is increased by sickness, is liable to be offended at every stage,—and lastly, they sooner relax in their exertions to prolong their lives than men.

To render travelling on horseback effectual in a consumption, it should be continued with moderate intervals from *six to twelve months*. But the cure should not be rested upon a single journey. It should be repeated every *two* or *three years*, till our patient has passed the con-

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* The bad effects of *inconstant* exercise have been taken notice of in the gout. Dr. Sydenham says, when it is used only by fits and starts in this disorder, it does harm.

sumptive stages of life. Nay,—he must do more; he must acquire a *habit* of riding constantly, both at home and abroad; or, to use the words of Dr. Fuller, "he must, like a Tartar, learn to live on horseback, by which means he will acquire in time the constitution of a Tartar."

I cannot conclude these observations without adding, that the author of it derived from his paternal ancestors a predisposition to the pulmonary consumption, and that between the 18th and 43d years of his age, he has occasionally been afflicted with many of the symptoms of that disorder which he has described:—By the constant and faithful use of most of the remedies which he has recommended, he has enjoyed for several years nearly an uninterrupted exemption from pulmonary complaints. In humble gratitude, therefore, to that BEING, who condescends to be called the preserver of men, he thus publicly devotes the result of his experience and inquiries to the benefit of such of his fellow-creatures as may be afflicted with the same disorder, sincerely wishing that they may be as useful to them, as they have been to the author.

DR. HEBERDEN'S PRACTICE.

VITRIOLIC ACID AND BARK; ALSO OPIUM.

Our great experience of this distemper has hitherto availed but little in enabling us to find out an effectual remedy. The cure of a disease inherited from parents, or owing to such a vitiated habit of body, as that, which is called scrofulous, has proved at least as difficult as it might have been expected, and physicians have hardly advanced further towards it, than by being able to mitigate some of the symptoms. Asses milk puts some check upon the tendency to emaciate. The diluted acid of vitriol in a decoction of bark is a very effectual remedy of the night sweats, and, as far as I have seen, is perfectly safe in all stages of this malady. A shortness of breath is no reason against using either this medicine, or an opiate at bedtime, which is the most certain soother of the cough, and saves the patient from being harassed with a restless night after a wearisome day. Where the pain of the side is violent, it will require, and is generally relieved by taking away four or five

ounces of blood. If this pain be rather lingering and teasing, than violent, a small blister applied to the part rarely fails of making a cure. A diarrhœa has seldom resisted three or four drops of tinctura opii taken after every stool. No medicines need to be directed for the hoarseness, swelling of the legs, or obstruction of the menstrua, which necessarily belong to the disease of the lungs and windpipe, and to the weak, exhausted state of the patient, and are no otherwise to be cured, than by curing the principal distemper. The fever and the signs of inflammation may rise so high, as to justify the losing a little blood: but frequent bleedings, though small, have appeared to injure the patient, by conspiring with the distemper to rob him of his flesh and strength.

DR. THORNTON'S DISCOVERY.

TONICS AND HYDRO-AZOTE.

Having been long resident at the Hot-wells, Bristol, and observing from a great experience in pulmonary disorders, which had been so fatal to his family, that *tonics* would seldom succeed, because whilst they strengthened the frame, at the same time very soon they inflamed the lungs, he instituted the practice of employing *general tonics*, at the same time he used means to take off *local inflammation*. From a number of successful cases published I shall only select the following.

Mr. Gregory, under Dr. Thornton, cured. Vide Philosophical Magazine, Number XIII. page 95.—*Communicated by Dr. Thornton.*

Mr. Gregory, M. P. of Berners-street, who had been long resident in India, laboured for several months under all the symptoms of phthisis pulmonalis. He expectorated a quantity of thick, opaque, and yellowish matter, which sunk in water; had disturbed nights, was greatly wasted, and his breathing was short and interrupted. He took by my order (which was executed by Mr. Seaton, a very ingenious apothecary and able chemist, who lives in Bridge-street, Westminster) from four to six quarts of hydro-azote daily, mixed with twelve of atmospheric air, and

at the same time had a mixture of myrrh and bark, with opiates occasionally; and under this treatment the cough was soon diminished, and in six weeks the patient was restored to health, and has continued free from every complaint these eight months; even a cold now passes off without exciting any symptoms of alarm.

Observations by Dr. Thornton.

The hydro-azote is made by burning æther under a tin bell, when the oxygen unites with the hydrogen and forms water, and the residue is azotic air; a species of heavy, inflammable, or hydrogen air, and some æther in the state of vapour, and a small proportion of fixed air. I have myself inhaled ten quarts of this pure, and the pulse has sunk from eighty to seventy beats in a minute, and continued so for a quarter of an hour or more. It is very grateful to the lungs; and I flatter myself, that this new species of air, first employed by me, may prove hereafter a valuable acquisition to the *ars medendi*. As we brace the constitution with tonic medicines, there is danger of local inflammation, which this appears to obviate; or, has the hydro-azote any peculiar healing quality?

J. Hughes cured by Dr. Thornton. Vide Philosophical Magazine, Vol. XXII. p. 25.

John Hughes, æt. 18, servant to Mr. Cozens, livery-stable keeper, City Arms, London-street, had all the marked symptoms of a decline. He had a very bad cough; used in 24 hours to spit up near half a pint of discoloured matter; had colliquative sweats; hectic fever: great debility: appetite good, and yet reduced in flesh to a mere shadow. These strong criterions of consumption had been progressively increasing for more than half a year, when he applied to me for advice. I pursued in this case the same plan as had saved Mr. Gregory of Berners-street, viz. the inhalation of *hydro-azotic gas*, with tonic medicines; and in two months all these alarming symptoms vanished, and the lad was restored to health.

Observations on this Case by Dr. Thornton.

1. Consumption is deemed a fatal disease; and the practice universally pursued in England has rendered it, I believe, still more destructive.

2. In Dr. Rush's works, the able professor of Medicine in Philadelphia, the best plan of treatment is laid down.

3. Bark (at which our practitioners are so alarmed) is recommended, with other tonic medicines.

4. Consumption must be considered either as a defluxion of the lungs, or as an abscess, or ulceration thereof.

5. If a defluxion, as in other gleets, bark is advisable: if ulceration, the treatment of the constitution should be as in other wounds.—Bark is there universally recommended.

6. Dr. Rush has recorded some cases where persons shot through the lungs have recovered. Captain Christie, of Liverpool, lately applied to me for advice. In a sharp engagement with the French, a ball entered the sternum, and lodged under the scapula. The wound in the lungs healed, and he felt afterwards only debility from the great loss of blood sustained.

7. The objection against bark, myrrh, and wine, is the *cough*. Colds are, I confess, aggravated by such treatment; but in the incipient and subsequent stages the only chance is, I speak from wide experience, the practice I have here recommended.

8. Inflammation of the lungs is prevented by the hydro-azote.

The lad is now before me; is fat, looks well, and has been cured a twelvemonth.

DOCTOR BEDDOES' DISCOVERY.

HYDROGENE GAS.

This ingenious physician, late chemical lecturer at Oxford, has the honour of first having introduced into practice this gas, of which he gives the following account in a letter to Dr. Darwin.

Bristol Hot-Wells,
June 30, 1793.

Dear Doctor,

It is impossible to engage in a new and arduous undertaking without incurring ridicule and obloquy: Of course I must expect to be decried by some as a *silly projector*, and by others as a *rapacious empiric*. Secrecy, as you well know, and promises unrestrained by sense or shame,

constitute the *essential character* of empiricism: Now I trust that I shall be acquitted of that disposition.

From the moment I became acquainted with the effects of pregnancy in suspending the progress of consumption, I conceived hopes that by combining this fact with the discoveries daily making in pneumatic chemistry, a successful method of treating this disease, in some of its stages at least, might be devised.

From a number of trials the Hydrogene Gas appears to be so totally free from all irritating and positively deleterious properties, that it may be breathed unmixed with impunity for a much longer time than any other of those airs that are incapable of supporting life, except perhaps azotic. Thus Mr. Scheele tells us that having by a strong expiration expelled from his lungs as much atmospheric air as possible, he was able to make twenty inspirations without inconvenience. Pilatre de Rozier frequently repeated the same experiment; and when it was objected to him that he did not empty his lungs of atmospheric air, he proceeded in the following manner. He inhaled a large quantity of hydrogene air, and then, applying his mouth to a tube, he blew out the air and fired it at the end of the tube, so that he appeared to breathe flame. In this case, he observed, if there had been any admixture of atmospheric air in his lungs, a detonation must have taken place in his mouth and chest. I have myself felt the pulse of Mr. Sadler, the English Aeronaut, while he has inspired, for above a minute and a half at a time, pure hydrogene air from steam and heated iron. From the rate of eighty-four in a minute it increased to an hundred and ten in fifteen seconds, and became soft and weak. A stout florid young woman breathed the same air for two minutes, during which she made twenty-six inspirations. She was not in the smallest degree affected, till she had walked down a flight of stairs. She then felt some sickness, and her head became a little dizzy and continued so for two hours, after which she felt perfectly well. Two other persons on the same occasion made several successive full inspirations of this air without the slightest inconvenience. It was inhaled through a tube, and in consequence of pressure on the reservoir, a strong current set into the mouth. The nostrils were not closed in any of these instances. A small quantity of atmospheric air was therefore probably inhaled with the hydrogene gas.

Since my Apparatus has been at all fit for use, I have employed *hydrogene* air in one pulmonic case; and the result has been satisfactory.

CASE.

A person of fair complexion and dark eyes had been for some time past subject to attacks of hæmoptysis attended with dyspnœa, severe coughing, and pain in the thorax. On a late seizure of this kind I advised the use of modified air. The pulse was hard, from an hundred and four to an hundred and eight. The countenance much flushed; the skin dry and hot, with considerable febrile rigour. All her feelings the same as at the commencement of former seizures. She began by breathing three hundred and fifty-six cubic inches of air; of which forty-four (nearly one-eighth) were *hydrogene* from steam and red hot iron. This quantity she consumed in fifteen minutes. When she sat down to inspire, she had very acute pain under the sternum; which entirely subsided while she was breathing. The pain afterwards returned, but with less violence; and upon inspiring from ten to fifteen minutes at a time several times a day for three days, it entirely disappeared with the other symptoms.—It had before occurred to me that air of a reduced standard would be extremely beneficial in sthenic inflammation; and I am confirmed in the opinion by this instance.

I have several times seen the short dry cough stopped at once by air similarly modified.

I have the honour to be,
Dear Doctor,
Your devoted Friend,
THOMAS BEDDOES.

This, and the case of Mr. Crump who was greatly relieved by the *hydrogene gas*, are the only cases published by Doctor Beddoes.

DOCTOR ALDERSON'S PRACTICE.

HYRDOGENE GAS.

[In a letter to Dr. Beddoes.]

June 5, 1795,
Hull.

SIR,

Miss ———, aged 16, had all the symptoms of approaching phthisis, col tremors about twelve o'clock, fever, heat, and flushing every after-

noon, pulse 120, countenance uncommonly florid, breathing rather difficult, cough severe, accompanied with expectoration; as several of her family had died of consumption, there could be little doubt of the tendency of these symptoms, and after finding nitre, spermaceti, vomits, &c. to have no good effect, I advised the inhalation of hydrogene Air. She therefore daily inhaled a quart of pure hydrogene from water, by every now and then taking an inspiration at the mouth-piece of the tunnel. It frequently occasioned nausea, and even vomiting. The pulse fell, the flushings and fever subsided, and the whole train of phthisical symptoms left her, but at the expence of her fine florid colour, her countenance having ever since been of a darker tint than before she was ill.

I am, Sir,

Your's sincerely,

J. ALDERSON.

DOCTOR CARMICHAEL'S PRACTICE.

HYDROCARBONATE GAS.

[In a letter to Dr. Beddoes.]

August 25, 1795.

DEAR SIR, *Birmingham.*

I now communicate to you the sequel of I. T—'s case. On the first of March 1795 (the date of the last report), he was continuing to gain strength, his cough was less frequent, the quantity of matter which he expectorated was small, his appetite was good, and he slept well. He found himself so well in every respect that he became anxious to return to his employment, and as I could not prevail upon him to desist from his intention, I advised him first to inure himself gradually to the cold, by walking out a little daily. He complied with my advice, and continued to gain ground till the 9th of that month, when in the evening he was seized with the usual symptoms of the influenza, an epidemic catarrhal infection, which at that time prevailed much in this place. The febrile symptoms ran high, and were attended by frequent cough and considerable pain in his side; he complained also of severe headache and unusual languor, he was thirsty, his tongue was white, and his pulse 110. March 15th, febrile symptoms continue; cough frequent, but now attended with increased expectoration; pain of his side

less severe; considerable dyspnœa on the slightest motion; pulse 115, small and weak. Until this attack he inhaled twice daily a gallon of hydro-carbonate, diluted with four times the quantity of atmospheric air, but as his strength wasted, it was found necessary to lessen the quantity to one quart diluted as above. March 20th, pain of his side something easier, but his cough is increased in frequency, and his expectoration more copious. Restless nights; no appetite; strength so much impaired, that for the four last days he has not been able to inhale the modified air; pulse 120. I directed a warm stimulating plaster to be applied to his side, and five drops of tinctura opii to be given every four hours. March 28th, pain of his side gone, but his other symptoms continue; bowels regular; has had better nights, but his sleep has been attended with profuse perspirations; the tinctura opii was omitted, and he was directed to take at nearly the same intervals a small glass full of port wine. April 15, complaints continue without material alteration. From this date he recommenced the use of the hydro-carbonate, beginning with it of the strength of one pint to sixteen quarts of common air. April 25, at first the modified air occasioned considerable vertigo, but he soon became so much habituated to its operation, that the quantity was increased to one, and afterwards to two quarts. His perspirations have abated, his cough has been less urgent, the quantity of his expectoration was diminished, and the dyspnœa, with which he has for some time past been troubled on the slightest motion, is greatly alleviated.

May 3d, since last report he has experienced considerable amendment, pulse 98. The quantity of hydro-carbonate was further increased to a gallon, diluted with four times that quantity of atmospheric air. May 15th, he has continued to recover so much in every respect, that yesterday he was able to walk fourteen miles into the country.

From this time I did not see him till the middle of June, when he returned to this place with an intention to follow his usual occupation. He was in every particular so much better, that he seemed to have recovered his health completely. I advised him however to the contrary, to which he consented, and he has since been occupied in haymaking, and more lately in reaping. I saw him a few days ago; he cannot be said either to cough or expectorate, except in the morning, and then in the most trifling degree, and his strength is so completely

restored, that he has been earning wages equal to those of the stoutest of his fellow-labourers, with both ease to himself and satisfaction to his employer.

I am, dear Sir, your's, sincerely,

JOHN CARMICHAEL.

DOCTOR REDFEARN'S PRACTICE*.

THE SAME REMEDY.

Mr. B. F——, æt. 23, of a florid complexion, narrow chest, prominent shoulders, smooth skin, and of a delicate slender form, has been afflicted with hæmoptysis about two years and a half, attended with dyspnœa, cough, a disagreeable sense of burning in the chest, and expectoration of a purulent nature. Pulse about 100, and invariably accelerated by the hydrocarbonate air. The hectic fever was not completely formed, but he had at times a sense of chilliness in the day-time, with heat towards the evening. He began by taking one quart of hydrocarbonate, diluted with twenty-one quarts of atmospheric air, once a day. From this mixture, he experienced much vertigo during its inhalation, and two hours after dinner he suddenly became vertiginous, from which, however, he soon recovered, although a violent head-ache remained during the rest of the evening.

The following days he only inhaled one pint of hydrocarbonate, mixed with twenty quarts of common air, once a day, which generally affected him with some slight vertigo and tightness over his forehead; the hydrocarbonate was increased gradually to two quarts or more at one dose, but I find it always necessary to begin with the original dose, where the air has been recently generated.

* A physician of eminence, at Lynn, in Norfolk.

My patient has been persevering in this plan about three months, and has had no return of the hæmorrhage; his cough and expectoration are very much diminished; sometimes he does not expectorate more than one table-spoonful in the space of three days; he has also never experienced any of the distressing heats in his chest, which harassed him before the administration of the air; his dyspnœa is perfectly removed; he can ride upon horseback twelve miles, without feeling much fatigue; his appetite is very good, and he sleeps well; pulse 80; he says, he thinks his health is perfectly established.

MR. BARR'S PRACTICE.

THE SAME REMEDY.

[*In a Letter to* Dr. Beddoes.]

August 5, 1795.

Dear Sir,

Rebecca Stanley, servant to Mr. Watt, of Heathfield, about 35 years of age, of a slender habit of body, and a narrow chest, was seized with the epidemic cold or influenza of last spring, and has ever since been afflicted with a tight dry cough, a pain of her side, and occasional fits of difficult breathing. She would not at first consent to have any medical advice, and had taken no medicines. A few days previous to my being consulted, she caught cold, which much aggravated all her complaints. The cough became almost perpetual, and on the 28th of July the breathing became oppressed in a degree truly alarming. She could not bear a horizontal position, but was obliged to be supported upright in bed, through the night.

Mr. Watt gave her an emetic early in the evening, which operated well, but produced no relief; ether, and other antispasmodics were employed, and a large blister was applied to the breast, where a sense of excessive tightness and constriction was felt, but these yielded no benefit. She passed a very bad night, and I was sent for early in the morning.

I found her skin hot and dry; her pulse beat between 90 and 100 strokes in a minute, and her breathing was very laborious. I gave her thirty drops of laudanum, with a dram of ether in half a tea-cupful of water. Her breathing was much relieved by it, and continued so during the day. I advised her to inhale a pint of hydro-carbonate in twenty quarts of common air, in the evening, and repeat the dose, increased or diminished according to its sensible effects, morning and evening; I likewise directed the laudanum to be repeated, if urgent symptoms should return; the dyspnœa was still further relieved by the inspiration of the air, and she passed a tolerable night; no more laudanum was given. Next morning she had a pint and half of hydro-carbonate, diluted as before. The breathing became very easy; at night she had the same quantity, and slept better. Next day the sense of tightness and constriction in breathing was nearly gone, but the cough continued very troublesome. The pulse was hard, small, and quick, the tongue was white, and the pain of the side was not removed. I took six ounces of blood, which was much inflamed, from her arm, and gave her a quart of hydro-carbonate, which quantity I directed to be inspired night and morning. I also advised three grains of James's powder to be taken every eight hours.

I saw her again on the second of August. All the symptoms were much mitigated. The pulse was reduced to 80, her nights were much better, but her cough was but little abated. The James's powder was directed to be continued a day longer, and the hydro-carbonate for a week; at the end of the week she was in every respect well, except a little cough. I however advised the continuance of the hydro-carbonate, till the cough was entirely removed. This I found to be the case, when I saw her three days ago; she sleeps well, and her pulse is full and regular.

In the beginning of this case, the extreme urgency of the symptoms induced me to use active remedies along with the hydro-carbonate, and it certainly did not impede their salutary operation. In the latter stage, it had no assistance. Could demulcents, expectorants, or antispasmodics, either single or conjoined, have done more? Could they have done as much?

I remain, dear Sir, your's, &c.

JOHN BARR.

DR. PEARSON'S PRACTICE.

VAPOUR OF ÆTHER AND CICUTA.

Elizabeth Vyse, aged 27, having been seized, at the end of autumn, with cough, fever, and spitting of blood, applied at the hospital for relief, and came under my care last October. She informed me, she had been subject to a cough for three winters. She had a quick and small pulse, flushed cheeks, dyspnœa, pain on the side, constant cough, attended with copious expectoration, and night-sweats. She was very feeble, and much emaciated. The hæmoptoe was soon removed by the medicines commonly prescribed in such cases; but the symptoms continued. I therefore ordered her, on the 12th of November, to breathe the vapour of vitriolic æther, impregnated with extract of cicuta, two or three times a day. On the 19th, when I saw her again, she informed me, that she had obtained great relief from the æther vapour, having much less tightness across the chest, and less pain of the side. She said, she was somewhat giddy after every inhalation.—December the 3d, less fever, less cough, and considerably better in every respect. Has found more benefit (to use her own words) from the æther application, than from any thing else.—December 10th, cough and other complaints so slight, that she says she does not require any more medicines.

N. B. During the use of æther vapour, she took a decoction of Peruvian bark and sarsaparilla, and pills composed of extract of cicuta and rhubarb.

DOCTOR LIND'S PRACTICE*.

THE SAME, WITH HYDRO-CARBONATE.

The first time I applied the modified atmosphere as a remedy, was in

* An eminent physician, settled at Windsor.

the case of an officer of the excise, who, during the severe weather of January, 1797, being much exposed to the cold, in the exercise of his duty, had got a violent cough, which caused the rupture of a considerable blood-vessel in his lungs, and this was soon followed by the symptoms of a rapid consumption. On the 25th of January he first applied to me, when I ordered him an infusion of roses, acidulated with vitriolic acid, and small doses of ipecacuanha, to stop the hœmoptoe; and for the cough and hectic fever I recommended him to breathe, several times in the course of the day, the vapour of vitriolic ether, in which the powdered leaves of *cicuta* were infused, after the manner recommended by Dr. William Pearson, of Birmingham. The benefit which he received from this application was really remarkable, for after not more than four or five days, almost all the bad symptoms were wonderfully diminished; yet, finding that he got hardly any sleep at night, and that he had been a bad sleeper for above a year, I made him inhale about a quart of hydro-carbonate gas, diluted with about fourteen quarts of common air, at bed-time, which procured him an uninterrupted night's rest, such as he had not experienced for many months before. He continued to follow the same course till the 20th of February, when his health being perfectly restored, he returned to his duty.

POPULAR REMEDIES.

1.

These are without number, consisting usually of a very nutritive diet, as oysters, also breaking the shells of garden snails, and using the slime they throw out, which is added to milk, boiled, and strained, and is a very rich and fattening food.

2.

The white slug to be eaten early in the morning.

3.

Milk from the cow, with conserve of roses in it.

4.

The jelly of snails with milk.

5.

Asses milk taken once or twice a day.

6.

Mock asses milk, made with shavings of hartshorn and eryngo root, with the addition of milk.

7.

Conserve of roses, and hot milk from the cow, and in some cases, rum and milk taken early.

8.

Breathing the air of a cow-house and brick-kilns.

9.

Horehound tea, and other bitters.

10.

Innumerable receipts, usually containing opium, given indiscriminately to all constitutions and ages.

RISE AND PROGRESS

OF

PNEUMATIC MEDICINE.

The late Doctor Beddoes, professor of chemistry at Oxford, was naturally struck at the discoveries made in chemistry by Doctor Priestley, who entered, like a meteor, upon his career, and proceeded with such rapidity of success, that he attracted the attention of philosophers of all nations to these and similar objects, and excited their emulation in the same pursuit; and thereby he has given rise to such auspicious consequences in chemistry, that his entry into this branch of experimental philosophy will be ever considered as an æra in the annals of chemistry.

It is impossible to compress his numerous discoveries in the limits of a few pages. They fill up six volumes; and as the knowledge of the *permanently elastic fluids* is the most important part of chemistry, it has in a manner given to this science an entirely *new appearance*, I would therefore recommend the reader to a careful study of the whole of his incomparable and entertaining works. I shall, however, here confine myself solely to the account he gives us of his

discovery of *vital air*, which he denominates *dephlogisticated air*.

"On the 1st of August, 1774, I endeavoured," says this illustrious philosopher, "to extract air from *mercurius calcinatus per se*; and I presently found that, by means of a very large burning-glass, an *aerial fluid* was expelled very readily. Having got three or four times as much as the bulk of the materials, I admitted water to it, and found it was not fixed air, because water did not absorb it. But what surprised me exceedingly was, "*that when a candle was put into this newly-* "*acquired air, the flame, besides being larger, burnt with* "*considerable more splendour, and heat, than in common* "*air; and a piece of burnt wood, that had any redness in it,* "*was rekindled and burnt away very fast, resembling by its* "*crackling noise, paper that had been dipped in a solution of* "*nitre.*"

"I extracted," he adds, "in the same way, a quantity of *air*, with the very *same property*, from the common *red precipitate*, which had been produced by a solution of mercury in spirit of nitre, and hence I concluded that this peculiar property was derived, in both instances, from *nitrous particles*. I even thought that what was usually sold as the *mercurius calcinatus per se*, was contaminated with *nitrous acid*. However, upon mentioning this suspicion to Mr. Waltire, he furnished me with some, which he assured me was genuine. This being treated in the same manner as the former, only by a longer continuance of heat, I extracted much more air from it than from the other. This experiment might have satisfied any other; but being at Paris in the October following, and knowing that there were several very eminent che-

mists in that place, I did not omit the opportunity to get an ounce of *mercurius calcinatus*, prepared by Mons. Cadet; of the genuineness of which there could not possibly be any suspicion; and at the same time I frequently mentioned my surprise at *the kind of air* I had got from this preparation to Mons. Lavoisier, and several other philosophers who honoured me with their notice in that city.

"At the same time that I had obtained the air above described from the *mercurius calcinatus* and the *red precipitate*, I also procured some of the same kind from *minium*, or *red lead*. As I never made the least secret of any thing that I observed, I mentioned this experiment *also* to all my philosophic acquaintance at Paris, and elsewhere; having no idea at that time to what these remarkable facts would lead."

The French chemists, who had been inattentive to the admirable discoveries of Dr. Black and Mr. Cavendish, were roused by the striking phænomena which Dr. Priestley's discoveries presented. Their minds being prepared by the active and enlightened genius of the age, the spark was no sooner struck, than the most brilliant effects began to show themselves along the French meridian. Never was the passion for novelty, now concurring with philosophical ardour, more happily exerted among the philosophers of that lively nation, than in the cultivation of this ample field of knowledge, which had been first explored, and the richness of the soil demonstrated principally by our illustrious countrymen, Mayow, Boyle, Hales, Black, Cavendish, and Priestley. But the efforts of Dr. Priestley's discoveries were not confined to France: they passed to every country in Eu-

rope, and across the Atlantic. More extensive in their influence than the commotions of Calabria, they spread their better agitations, particularly into Germany, Italy, and Sweden; in which last kingdom they met the congenial spirit of two illustrious chemists, BERGMAN and SCHEELE; the *former* distinguished by the order, precision, and various abilities with which he improved chemistry; and the *other* by so numerous a train of discoveries as could only occur to a man who, like Scheele, joined to a profound knowledge of chemistry, an intuitive genius, and a laborious zeal. The discovery of VITAL AIR, the pride, as it is called, of modern philosophy, had slumbered for more than a century, when these illustrious philosophers drew it forth from nitre, and a variety of other substances, and called it *empyreal air*, a word which implies, "*formed of the element of fire*," or "*an "air pure in the extreme.*"

It is singularly curious, that three philosophers of the present day should all, and at the same time, and by different processes, discover this *wonderful gas*, OXYGEN AIR, which has thrown light on the whole economy of nature, and all of them be ignorant of the prior right of Hook and Mayow, of whose claim they certainly knew nothing.

At the sound of the word *oxygen*, I can readily conceive the effect that this must have on the different classes of mankind.

One circle there is, whom the word *oxygen* affrights, because they have never understood it, and think that the shortest and easiest road is to deny its existence.

Another, angry at a word sounding ill to their ears, without formally denying the existence, refuse it at least all its

properties, or those chemical characters, which Lavoisier and his followers have discovered.

A third, more agitated than the rest, murmur at the brilliant part which this plays, and at the oblivion of that principle, which by the mere dint of imagination they made into fixed fire, entering into the composition of bodies under the title of phlogiston.

A yet more numerous circle, and seemingly more temperate than the last, has, however, all the disposition to become the most furious. But this did not arise before *oxygen* was introduced as a *medicine*, before to it was attributed the prerogative of action, and little or nothing to the basis, to which it is found attached. These, astonished to see this intruder admitted as a medicinal matter, examine every feature of its countenance, turn it on every side, and behold nothing but a phantom, which arises from being unaccustomed to its presence, and from not following its steps from its appearance in the world in the month of August 1774, since which time it has been continually claiming fresh attentions from the philosopher.

It is now no longer permitted to the *physician* to remain a mute and insensible spectator to the impulse already given to the science of the animal economy. No professional man, if he is at all interested in the advancement of his studies, if he is at all animated with a proper zeal for the progress of medicine, can any longer neglect to instruct himself in the conclusions of modern discoveries. The cold statue-like insensibility of some, the affected indifference of others, the sneer uttered by this man, the irritated self-love of the other, the attachment of mankind for the doctrines of

their fathers, the hatred of novelty, prejudices of every kind, all the mean passions which glide into society, playing their part on the theatre of civilized life, are to be found also in the career of science; the violences which these have produced, the severe taunts which they give rise to, the sarcasms, or epigrams, with which they arm discourse, the ridicule which some endeavour to throw on the inventors, the epithet of innovators, of which they are prodigal, all this may retard, for some days, or even for some years, the progress of new ideas, but TRUTH will overcome every obstacle; *she* cannot be frightened either by the clamours of envy, or the resistance of prejudices, or by the opposition of ignorance: *she* is the rock against which the impotent billows of human passions are broken: when *she* strikes with *her* bright light, spirits sufficiently elevated to support *her* splendour, *she* soon inspires them with the necessary power to proclaim *her* dictates with confidence, so as finally to establish her rights, in vain rejected. The cry still vibrating in our ears against the circulation of the blood and antimony, did not prevent the discovery of HARVEY from taking rank among the number of demonstrated truths, and antimony, from being accounted one of the most noble of our medicines, when skilfully administered.

It will turn out the same with the new chemical discoveries, when applied to illustrate the phenomena of the animal economy. Its career, so gloriously begun, will never stop; every thing announces a remarkable advancement in its progress begun in our time, and aided by our efforts. If mean talents, lethargic apathy, or irascible self-love, shall again endeavour to retard its steps, their opposition shall

vanish, especially by the energies of the rising youth. Strangers to the tumultuous passion of envy, the new generation, so eager to acquire knowledge, shall be the witnesses and actors in the great *medical revolution*, of which we have only shewed the necessity, and laid the foundation-stone. Like to those great bodies, whose mass and velocity carry every thing before them that comes within the sphere of their action, obliging them to obey their movements, so *the revolution of chemistry*, after having shaken the very basis of the former physical science, will extend its influence over the whole science of nature, and no part will receive a greater and quicker change than the art of healing, which forms so essential a part of Natural History.

Whilst the progress of the *New Chemistry* was in a great measure stopped in France by the Revolution, Dr. Beddoes, the celebrated professor of chemistry at Oxford, endeavoured to turn the attention of the faculty in *England*, to this new branch of science. He settled at Bristol Hot Wells, with a view of curing consumption by a *reduced atmosphere*, and the abstraction of *oxygen* from the system. His works soon passed into the hands of every one; for he possessed the rare art of diffusing through his writings that lively interest, that enchanting colouring, and that delicate and vigorous touch, which influence, attach, and subdue the mind. The profundity of his reasoning is every-where united to all that agreeable imagery, which the most brilliant imagination can furnish. The sacred fire of genius animates all his productions; his theories constantly exhibit the most sublime prospects in their totality, and the most perfect correspondence in their parts; and even whilst he raises *hypotheses*, we

are inclined to persuade ourselves that they are established truths.

Unfortunately for the establishment of *pneumatic* remedies, *consumption* is not a disease often cured, and few other diseases are seen at the Hot Wells; and had it not been for Dr. THORNTON, who was established in LONDON, the fabric which was commenced to be raised would have soon fallen: still as in the story of antiquity, there is no difficulty to prophecy a *new phœnix* would have ultimately arisen from the *ashes* of the *old*, with healing on her wings.

The celebrated Dr. DARWIN, who has turned his attention much to this interesting subject, observes, "that VITAL AIR "penetrates the fine moist membranes of the air-vessels of "the lungs, and unites with the blood by chemical attrac-"tion, as is seen to happen, when blood is drawn into a "basin, for the lower surface of the crassimentum is of a "dark red, so long as it is covered from the air by the upper "surface, but becomes florid in a short time, on its being "exposed to the atmosphere. The perpetual necessity of "the mixture of VITAL AIR with the blood in the lungs, "evinces that it must act as a stimulus to the sanguiferous "system, as the motions of the heart and arteries presently "cease, where animals are immersed in air which possesses "no oxygen. It may also subsequently answer another im-"portant purpose, as it probably affords the *material* for the "production of the *sensorial power*, which is supposed to be "secreted in the brain and medullary part of the nerves; "and that the perpetual demand of this fluid in respira-"tion is occasioned by the *sensorial power*, which is supposed

" to be produced from it, being too subtle to be confined in " any part of the system *."

The Rev. Mr. TOWNSEND †, the learned author of *The Elements of Therapeutics*, observes, when speaking of the FACTITIOUS AIRS, " that these promise, under the skilful " management of Dr. BEDDOES, at the Hot Wells, Bristol, " and Dr. THORNTON, in London, to be a remedy well " worthy the attention of the medical practitioner. The VI- " TAL AIR, properly diluted with common air, is a stimulus " the most natural and diffusive. It promotes the insen- " sible perspiration, greatly aids digestion, favours sleep, " exhilarates the spirits, and relieves difficult respiration. " It is found of the highest advantage in most nervous dis- " eases. The AZOTIC AIR abates inflammation, and is " the only remedy with the HYDROGEN AIR, that is " found capable of arresting the progress of consumption, " and the CARBONIC ACID AIR is a most powerful anti- " septic."

It being ascertained, by direct experiment, " that the heart and arteries can be *raised* ‡ from 64 to 120 pulsations in a

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* Vide *Zoonomia, or the Laws of Organic Life*. A work which occupied, as this philosopher says, thirty years deep meditation.

† The pupil of Cullen, rector of Pewsey, who has had 60 years experience.

‡ Although Mr. Taylor was not more than 22 years of age, his natural pulse was only 64 previous to the experiment. During the inhalation of the pure OXYGEN air, his pulse, as Dr. Higgins remarked, was quickened to 90 beats in a minute, and was considerably increased in *fulness* and *strength*. The vessel being immediately charged again with 19 pints of OXYGEN GAS, he respired these also, and consumed them entirely in six minutes. His pulse was in consequence increased

minute, by the inhalation of OXYGEN, or VITAL AIR, and that by abstracting this VITAL GAS from atmospheric air, their actions can be *lessened** from 120 to 64 beats in a minute, the PNEUMATO-CHEMICAL *physician* has therefore a complete power over the heart and arteries, just as a *watch-maker* has a power over the movement of a watch, by means of the regulator."

It being likewise proved, "that the blood and solids are composed in part of VITAL AIR, he has the power of altering the *mass of blood*, and therefore of changing the constitution. He possesses in the VITAL AIR a means of promoting the *insensible perspiration*, quickening the *digestion*, increasing the *animal heat* and *muscular powers*, and of raising the *spirits*."

Attention is undoubtedly not less due to the OTHER AERIAL ELEMENTS; and if the importance of OXYGEN seems to have been chiefly insisted on in the foregoing observations, it is only because we have very few facts which afford a foundation for reasoning concerning the connexion of an excess or deficiency of CARBON, HYDROGEN, or AZOT, with the functions of life; and yet much obscurity and

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to 120 beats in a minute, and was *vigorous withal*. See *Minutes of the Society for Philosophical Experiments*, p. 146.

* One consumptive patient, contrary to my judgment, says Dr. Beddoes, used to inhale at times air wholly deprived of *oxygen*. During this process, I have felt the pulse nearly *obliterated*. He loved to indulge in it, and describes the incipient insensibility produced on him as a state highly delightful. Vide Dr. Beddoes's *Observations*, p. 30.

many difficulties must be expected to remain, till we acquire the knowledge of such facts. Let us, however set a due value on our *present knowledge*, though it be imperfect; and restrain those rude hands that are ever ready to pluck up the tender plants of science, because they do not bear *ripe fruit* at a season when they can only be putting forth their *blossoms*.

Unfortunately for this branch of science, the very first trials of *pneumatic medicine* were made in France, at the Hotel Dieu, upon twenty *consumptive* persons, to whom *vital air* was given. On all hands, it was acknowledged, "that it gave them additional strength, a feeling," as FOURCROY expresses it, "of gaiety; some left their beds, in "which they had been confined for weeks, and walked a "mile but in all the *fatal catastrophe* was accelerated." "It spread," as CHAPTAL says, "flowers on the borders of "the tomb." From this improvident and unsuccessful attempt, it became wholly disused, and discredited, in France.

A subscription for a *Pneumatic Institution* was then raised, and *three thousand pounds* collected. Doctor Darwin writes to Doctor BEDDOES as follows:—

Derby, Jan. 17, 1793.

DEAR DOCTOR,

Your Treatise on *Consumption* I have read with great pleasure, and am glad to find you are about to combat this giant-malady by means of *hydrogen air*, which has hitherto baffled the skill, and withstood the prowess of all ages; and which in this country destroys whole families, and, like war, cuts off the young in their prime of life, sparing old age and infirmity.

Large abscesses frequently exist many weeks—so long as they are precluded from any access of *air* without occasioning the *hectic fever;* but on their surfaces being exposed to the contact of the air by opening them, hectic fever is occasioned in a very few hours. From this cause arises the advantages of opening large abscesses by means of *a seton* passed through them. Hence where a wound is required to heal by the first intention (as it is called) as in compound fractures, it must carefully be confined from any access of air. And hence, lastly, the reason, why ulcers of the lungs are so difficult to heal, viz. because they are perpetually exposed to a current of air. What part of atmospheric air is hurtful to ulcers, whether it be the *oxygen* in too large a quantity, as your ingenious reasonings seem to countenance, which is to be counteracted by an opposite air, your cautious experience and your particular attention to consumptive patients will soon decide.

One agreeable circumstance attending your application of different kinds of air to consumptive people is, that they may at the same time persist in any plan of medicine or diet, which themselves, or their friends for them, are solicitous to pursue, without interfering with your remedy, which is immediately applied to the seat of the disease, and the ulcerations of the lungs.

Go on, dear Sir, save the young and the fair of the rising generation from premature death; and rescue the *science of medicine* from its *greatest opprobrium*.

Yours, &c.

ERASMUS DARWIN.

Expectation was on tiptoe to see this famous institution for the *airs*, but the sudden appearance of the *Digitalis*, Foxglove, absorbed all his attention, and the intended *Pneumatic Institution* saw nothing but this remedy administered in it, which has the *superior recommendation* of being capable of being put into pills, or two-ounce phials.

THE FOXGLOVE, INTRODUCED BY DR. BEDDOES.

Dr. Beddoes, in his late work on Consumption, says, "I daily see many patients in pulmonary consumption advancing towards recovery with so firm a pace, that I hope consumption will henceforward *as regularly be cured* by the *foxglove*, as *ague* by the *Peruvian bark*. Could we obtain a single auxiliary for foxglove, such as we have in many instances for the bark, I should expect that not one case in five would terminate as ninety-nine in an hundred have hitherto terminated. But I believe a majority of cases will yield to simple foxglove. It is evident that no new cases need be suffered to advance beyond the first stage, without the application of this medicine, and few into it."

Dr. DRAKE speaks of it thus: * "It has for several years been given in pulmonary hemorrhage with effect, and certainly will continue to be, with the intelligent, whatever may be the result of its trial in phthisis. I am happy, however, to say, that the success which has hitherto attended the exhibition of the digitalis in *phthisis*, has been very considerable; several patients in its confirmed state have been cured by this remedy; almost all have been relieved; life

* See Medical and Physical Journal, vol. ii. p. 418.

has even been protracted by it; and when death has taken place, whilst the system was under its influence, it has been free from pain or struggle; my expectations have been answered, and Dr. Fowler, I understand, from further trials, is fixed in his former favourable opinion."

Dr. MOSSMAN says,* "I have prescribed the digitalis very extensively for upwards of twelve months, and during the last six of that period I have had very ample experience of its powers. I am now fully persuaded, that, by a judicious management of the plant variously combined, I can obviate pneumonic inflammation with as much certainty as I can arrest the progress of an intermittent fever, by means of the bark of cinchona. Again I am persuaded, that, if pulmonary consumption be divided into four stages, the digitalis will very certainly *cure the three first*, and as certainly alleviate the distressing symptoms of the last."

"In the primary stages of the complaint," Dr. Mossman is of opinion "that this remedy approximates to a *specific*." He thinks "that it possesses in itself† a power directly sedative, and that the application of this power, by lessening the irritability of the muscular fibre, will explain its salutary operation in the cure of pulmonary consumption."

"From the observations of all these gentlemen, as well as from those of other physicians‡, the *digitalis* must certainly

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* See Medical and Physical Journal, vol. iv. page 309.

† See his Essay on Glandular Consumption.

‡ See Dr. Kinglake's Remarks on the Effects of Digitalis, vol. iii. p. 120, of the Medical and Physical Journal.

be admitted to be a very powerful remedy in phthisis; and although it is by no means to be regarded as a specific, still it must be allowed, says Dr. Thomas,* to have, in many instances, procured the most beneficial effects."

Doctor Ferriar speaks of this remedy thus:—"An extensive employment of digitalis, during a period of *nine years*, has enabled me to speak of its properties with some degree of confidence. My early trials of this medicine in *pulmonary complaints*, were suggested by the opinions of Dr. Withering, Dr. Beddoes, Dr. Darwin, Sir George Baker, and other physicians, on this subject. The effect of foxglove in retarding the velocity of the pulse, as a direct sedative, was too striking to be long overlooked; and when its application to diminish morbid irritation in the vascular system was once pointed out, the consequences of the idea were easily comprehended. If any man had expressed an opinion, a few years ago, that we should discover a medicine capable of reducing the pulse, without danger, from 120 in a minute to 75 or 80, at the will of the practitioner, he would have been ridiculed as a visionary. Such, however, under proper management, is the power of digitalis. A full dose of foxglove is merely a relative term. To one patient, half a grain may be a full dose; to another, six or eight grains may be given without producing any sensible effect. The varieties of sensibility and habit can only be ascertained, by beginning with the lowest dose, and increasing it with the most scru-

* Vide Modern Practice of Physic, p. 429.

pulous care. I have invariably given the powder of the dried leaves, in substance, as the preparation least liable to difference of strength. I have begun the use of the digitalis with impunity, in so many cases, in doses of half a grain, and I take no other precaution than that of joining an equal quantity of opium with it, at first, to lessen the chance of nausea.

"I have frequently ordered digitalis, in doses of half a grain, to be given every four, five, or six hours, according to the urgency of the case, in active hæmorrhagies, even when I was a stranger to the habits of the patient. I have always succeeded in reducing the pulse, and generally in curing the disease; and I have never seen any material inconvenience produced by this practice, a slight nausea being no unfavourable circumstance to the patient. At the same time that I vouch for the safety of this method, it must be observed, that great attention is necessary, on the part of the physician and attendants: the patient's pulse must be examined from hour to hour, and on its first tendency to flag or even the slightest indications of sickness, the exhibition of the medicine must be suspended.

"After establishing the power of foxglove, in cases of hæmorrhage, arising from increased action, I was encouraged to try it in the first stages of *pulmonary consumption*. The result of my experience may be told in a few words: it is, that the patient's ultimate recovery is not to be confidently expected, even when the pulse is reduced in velocity, and the symptoms are evidently mitigated, for a time, by the action of the medicine. Many disappoint-

ments have taught me not to be elated by one or two instances of success; and I should deceive the public if I presented to them only examples of fortunate practice. I believe that digitalis, properly administered at the beginning of phthisical affections, may suspend the morbid action of the lungs, by which tubercles are formed; that by its continued exhibition after hæmoptysis, it may be possible to procure the cicatrization of the ruptured vessels, and thus to prevent the formation of ulcers; and I am even disposed to hope, that its power of soothing irritation may extend so far, as sometimes to heal ulcerations of the lungs, in the advanced stages of consumption. At present, I dare not suppose that many cases of confirmed consumption will be cured by it. I have found it powerfully assisted, in some instances, by the exhibition of myrrh and the ferrum vitriolatum, at the same time. I have seldom found it necessary to exhibit large doses of the digitalis in this mode of practice. Three or four grains a day have always depressed the pulse sufficiently for any useful purpose; they have brought it to 76 in a minute; and I have met with few persons whose stomachs could bear a larger quantity.

"From what has been said of the sedative power of digitalis, it may be expected to prove highly useful in many cases of active inflammation, particularly in pleurisy and peripneumony, after bleeding has been practised, as far as the patient's strength will permit. We have long wanted a remedy, capable of lowering the pulse, in certain states of these disorders, without increasing evacuation to a dangerous degree. It would, indeed, be extremely rash to decide at present on the various indications which may arise for the

exhibition of this remedy, from the general principle of suspending increased action.

" From the evidence which has been produced, I think we may conclude :

" 1. That digitalis is a direct remedy in active hæmorrhage, by its proper action in retarding the velocity of the circulation.

" 2. That the diuretic action of digitalis, though independent of its sedative power, may sometimes take place in conjunction with the latter, and may even co-operate with it, by its effect on the system as an evacuant.

" 3. That in pulmonary consumptions, arising from hæmoptysis, or tubercles, much relief may be obtained from the use of digitalis ; and even a cure may sometimes be hoped for, under circumstances which formerly precluded all expectations of recovery.

" 4. That in anasarcous affections of the cellular membrane of the lungs, or in cases where effusion or inflammatory exsudation shall have taken place, digitalis promises to prove an useful medicine.

" 5. That upon the principle of diminishing irritability, digitalis has been very useful in chronic coughs, in spasmodic asthma, and in palpitations of the heart, not depending on simple debility.

" 6. That the hydragogue and diuretic powers of digitalis, although not invariably exerted in consequence of its exhibition, are sufficient to render a trial of it proper, in most cases of dropsy ; but that it seems to operate most beneficially, when combined with other hydragogues or sudorifics.

" 7. That when digitalis is to be exhibited repeatedly, during the day, and especially if it be thrown in at short intervals, in cases of urgency, the strictest caution is necessary on the part of the physician and the attendants, to prevent the alarming and even fatal consequences which may arise from administering this powerful medicine incautiously.

" 8. That in simple inflammatory diseases, the use of digitalis may perhaps supersede the necessity of repeated bleeding and purging, and may save the practitioner from much anxiety and embarrassment, which attend the present practice in such complaints *."

PRESENT STATE OF THE PNEUMATIC PRACTICE.

Thus, if I may so far express myself, was established the *digitalis*, which absorbed all other considerations, but not the INSTITUTION for the trial of the airs; and, Doctor BEDDOES dying, the aerial practice was left as an orphan, without any protector but *myself*.

Twenty years have elapsed since the discovery of VITAL AIR † and the *composition of the atmosphere*, before their application to *medicinal purposes*; and Doctor BEDDOES and *myself*, were, after this long lapse of time, the founders of *pneumatic medicine*. To him, chiefly, belonged the honour of instituting the trials of a *reduced atmosphere* in PNEUMONIA and CONSUMPTION; to me was delegated a long tribe of other diseases, in which I made the *first experience*, which my colleague published in letters addressed to him; and afterwards the

* Vide Doctor Ferriar on Digitalis.

† The vital air was discovered in 1774.

new cases and facts were continued in the *Philosophical Magazine.*

Twenty years are now elapsed since my first application of these *aerial remedies*; and they still maintain with *me* the high estimation they formerly possessed; and although I stand *single* in the application of these remedies, still I have no manner of doubt, but that, when I shall have sunk into the vale of years, that PNEUMATIC MEDICINE will extend its influence over the world, and some other physician will arise, who will support the renown accruing from such important discoveries, which, at the conclusion of the last and beginning of the present century, have been made in *medicine*, as well as chemistry.

During this long period of *twenty years*, I have never deserted the aerial practice, and year after year the cases of extraordinary cures, baffling all the common means, have been published by me. These form such a body of evidence, that the most sceptical must be now convinced of the importance of this *adjunct* to *medicine*, and discarding *prejudice*, ought to join hand in hand in promoting the practice. The field is wide, the harvest is ripe; there only wants more husbandmen in the vineyard, and may the ALMIGHTY shower down new blessings upon the world, to lessen the afflictions of mankind in this transitory station upon earth.

The cures as performed by the *vital* and *other airs*, may be seen collected together at the end of my *Philosophy of Medicine* *.

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* The Philosophy of Medicine, fifth edition, published by Sherwood, Neely, and Jones.

INFLAMMATORY SORE-THROAT;

OR,

QUINSY.

CYNANCHE TONSILLARIS.

SYMPTOMS.

The disease appears, by some tumour, sometimes considerable, and by a redness of the parts; is attended with a painful and difficult deglutition;* with a pain sometimes shooting into the ear; with a troublesome clamminess of the mouth and throat; with a frequent, but difficult excretion of mucus; and the whole is usually accompanied with a pyrexia, or fever;† and is never contagious.

BLEEDING, GENERAL AND LOCAL.

In the cure of this inflammation, *some bleeding* may be

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* This should be particularly noticed by the practitioner, as it distinguishes, in a remarkable degree, this disease from the malignant or putrid sore-throat.

† It comes on gradually, whereas the scarlet-fever attacks in a moment, and the redness of the skin is not remarkable.

proper;* but *large general bleedings* will seldom be *necessary*. The opening of the ranular veins seems to be an insignificant remedy; but *leeches* set upon the external fauces are of more efficacy.†

VOMITING.

At the beginning of the disease, *full vomiting* has been frequently found to be of great service.‡

GARGLES.

This inflammation may be often relieved by moderate astringents and particularly by acids applied to the inflamed parts. In many cases, however, nothing has been found to give more relief than the vapour of warm water received into the fauces by a proper apparatus.§

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* I have rarely ever found bleeding necessary, except in very plethoric habits.

† As preventing rubefacients this is seldom had recourse to.

‡ As two grains of tartarized antimony, and a scruple of ipecacuanha, in an ounce and a half of rose water, and 2 drachms of syrup. When the throat appears near closing, a vomit is then of primary importance.

§ Receiving the steam of warm water, by putting the head over a bason of boiling water, with the mouth open, has sometimes dispelled this disease; more especially, if the throat has been kept heated during the night by wearing a piece of flannel round it. The time of employing gargles should be after the tonsils have discharged. The best gargle is,

R. Infus. Rosæ, unc. 7.
Mel. despumat. dr. 2.
Tinct. Myrrh. dr. 3.

To be used with a little port-wine, every half hour. A common gargle has been found of great service, consisting of sage-tea, honey, and port-wine, with a tea-spoonful of vinegar added to it.

RUBEFACIENTS AND BLISTERS.

The other remedies of this disease are *rubefacient* * or *blistering medicines*, † applied externally to the neck; and, with these, the employment of *antiphlogistic purgatives*; ‡ as well as every part of the antiphlogistic regimen, *excepting the application of cold.* §

SWEATING.

This disease, as we have said, often terminates by resolution, frequently accompanied with *sweating*; which is therefore to be prudently favoured and encouraged. ‖

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* As, a tea-spoonful of hartshorn, to 2 of olive-oil, applied on a black ribbon to the throat. Or, the following,

R. Ol. Amygdal, unc. 1 ss.
Camphor pulv. dr. ss.
Spir. Sal. Ammon. cum calce vivâ unc. ss. M.

† Where the case is bad, a blister in front, going half round the throat, has done the greatest good.

‡ As, 2 scruples of vitriolated magnesia, in a little rose-water, every three hours.

§ The room must be kept very warm, and the window shut.

‖ Dover's powder is an excellent sudorific in these cases. The method of giving it is three grains every three or four hours. Many other sudorifics, however, are found to answer tolerably well, as white-wine whey, whey made with dulcified spirit of nitre, vinegar-whey, with several other drinks of a similar kind. In some severe cases it may be proper to give small doses of tartar emetic taken in such quantities as to produce a slight nausea, without vomiting, are also *good sudorifics*. Two table-spoonfuls of the following julep may be taken every half-

STEAMING THE THROAT, AND USING THE LANCET.

When this disease shall have taken a tendency to suppuration, nothing will be more useful, than the frequent taking into the fauces the steams of warm water.* When the abscess is attended with much swelling, if it break not spontaneously, it should be *opened by a lancet;* and this does not require much caution, as even the inflammatory state may be relieved by some scarification of the tonsils.†

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hour till the effect be produced, drinking at the same time, plentifully of some warm barley diluent.

R. Antimon. tartarisat. gr. 3.
Aq. font. unc. 7.
Syr. Papaveris rubri, unc. 1.
M. f. julap.

* A little vinegar may be added to it.

† Scarification is the operation of making little cuts, or punctures, in a part for the purpose of taking away blood.

DISCOVERIES

SINCE THE

TIME OF DOCTOR CULLEN.

DOCTOR THORNTON'S PRACTICE.

SAL PRUNEL.

It is an old adage, "Prevention is better than cure;" and the causes of catarrh, &c. ought to be attended to. Exposure to wet and cold is the *predisposing cause*, but the *exciting cause* is the after stimulus of heat. It affects especially the young and sanguine, and a disposition to it is often acquired by *habit*; so that from every considerable application of cold to any part of the body, this disease is readily induced. It occurs especially in spring and autumn, when *vicissitudes* of cold and heat frequently take place. The inflammation and tumour are commonly at first most considerable in one tonsil; and afterwards, abating in that, increase in the other. Young medical men, who are exposed to great changes of atmosphere, are more particularly subject to this disease. As the disease, as we explained when treating of *Catarrh*, is inflammatory, I have never failed curing it by attention to this Law in the œconomy of *Nature*, impressed by WISDOM and OMNIPOTENCE.

A LAW OF NATURE.

Heat (Caloric) is either *free*, that is, uncombined, and perceptible, or *latent*.

PROOF. If you *boil* water over a fire, it will raise the thermometer to 212, the boiling point, nor will it ever rise higher. The surplus of heat from the fire goes to render the water *aeriform*, or in the state vapour. So, if you place *ice* before the fire, the thermometer will stand at 32, the freezing point, until the whole be melted. Thus *æther*, passing from a fluid to an aeriform state, placed round a bottle of water, will rob the water of its caloric, and convert it into ice. Thus ice passing from a solid to a fluid, will rob cream, or other bodies of their free caloric, and convert them into ice.

APPLICATION OF THIS PRINCIPLE.

A small piece of *sal Prunel*, (purified nitre) being repeatedly put into the mouth, the saliva being swallowed, and piece removed, as often as the saline taste becomes disagreeable, has always prevented a sore-throat in me. Passing from a solid to a fluid state, it robs the throat of its *caloric*, and at once the inflammation. After this I take a tea-spoonful of brandy, with a similar view; I use the pediluvium, or putting the feet into hot water; and, going early to bed, I have tied a silk-stocking round the throat, and treated it as a common cold, with warm diluents, as gruel at supper, hot, and linseed-tea, and a purgative in the morning. If this should not succeed, I have taken pepper in gruel before going to bed the next night, which has excited a general stimulus to the whole fauces, instead of a local determination to the tonsils, and have found myself cured.

DR. RUSH'S PRACTICE.

MERCURY.

This eminent physician advises a mercurial gargle, as

R. Hydr. Muriat. gr. 1.
Infus. Rosæ, unc. 8.
Ft. Garg.

To be used three or four times a day, with a calomel pill at bed-time, worked off in the morning with a scruple of rhubarb, and a drachm of vitriolated kali.

DR. THORNTON'S PRACTICE.

SUDORIFICS, AN EMETIC, AN APERIENT, AND THEN BARK.

Besides the common application of hartshorn and oil round the throat, where the inflammation of the tonsil has so far advanced, as that suppuration cannot be retarded by the nitre, I having ordered the Pulvis Doveri to be continued every four hours, the patient being kept in bed, gruel and sago only allowed, and barley water.

R. Pulv. Ipecac. comp. gr. 2.
Syr. Tolut. dr. 1.
Aq. Cinnam. dr. 3.
Aq. Rosæ, unc. 1.
Ft. Haust. 4tâ quâque horâ sumend.

When the tonsil is upon the point of suppuration, I then give a vomit.

R. Ipecac. scr. ss.
Antim. tart. gr. 2.
Syr. Tolut. dr. 1.
Aq. Rosæ, unc. 1. ss.
Ft. Haust. horâ 7mâ. vespere sumend.

Although deglutition be most difficult, I never knew vomiting do any injury.

As the matter might be supposed to have passed into the stomach, I order the following aperient draught to be taken, one third at ten, and the remainder early the following morning:

R. Rhei pulv. scr. 1.
Kali vitriolat. scr. 2.
Syr. Tolut. dr. 1.
Aq. Cinnam.
Aq. Menth. pip. āā dr. 6.
Ft. Haust. aperiens.

After that I order the following gargle.

R. Tinct. Myrrh, unc. 1.
Nitri purif. dr. 2.
Infus. Rosæ, unc. 8.
Ft. Gargarism.

To be used every four hours with Port-wine, the addition of warm sage tea, and a tea-spoonful of vinegar is an improvement.

After this I order the bark, to hinder a relapse, as

R. Decoct. Cinchon. unc. 7.
Tinct. Cinchon. ē. unc. 1.
Ft. Mist.

Two table-spoonfuls to be taken at bed-time, the day after the aperient draught, and afterwards repeated every six hours.

INFLAMMATION OF THE HEART.

CARDITIS.

SYMPTOMS.

This disease is known by the pain being seated on the left side, more immediately in the situation of the heart; from a great anxiety; an interrupted pulse; great anxiety of mind; a most extreme sense of difficulty of breathing, or suffocation; swooning away, and is always more or less combined with pneumonia; the blood exhibits the usual buff coat.

CALLED THE BASTARD PERIPNEUMONY.

Old authors have employed this name to denote this disease, as connected with pneumonic inflammation.

THE CURE.

This is the same as in pneumonia, and usually yields to the same treatment. *

* I have seen in this disease the greatest advantage from fomenting the breast and feet with hot vinegar, before the application of a blister to the chest.

INFLAMMATION

OF THE

STOMACH AND INTESTINES.

GASTRITIS.

SYMPTOMS.

This disease is attended with fixed and acute pain, internal heat, the pulse is frequent and contracted, there is great anxiety and vomiting.

BLEEDING.

In this disease the patient receives immediate relief from bleeding, and the pulse becomes fuller and less frequent.

FOMENTATIONS.

Fomentations are to be externally applied.

R. Fol. malv.
Flor. chamomel. aa. unc. 1.
Aq. fontan. lb. 6. coque ad lb. 3. & cola.

BLISTERS.

The external application of camphorated oil and blisters are frequently proper.

GLYSTERS.

Emollient glysters are to be employed.

R. Lact. vaccin. lb. ss.
Sacchar. rubri.
Ol. olivar. aa. unc. I. m. f. enema.
Repet. pro re natâ.

R. Ol. Palmæ, unc. I. ss.
Vitel. unius ovi probe subactis, adde
Lact. vaccin. lb. ss. m. f. enema.

The patient should drink mucilaginous liquors in large quantities, and the following frequently affords relief.

R. Pulv. camphor. gr. 7.
Mucilag. g. tragacanth. q. s.
Nitri gr. 5.
Aq. cinnamon. simpl. unc. I. ss.
F. haust. quartâ quâque horâ sumend.

ILIAC PASSION.

COLICA STERCOREA.

SYMPTOMS.

This disease is attended with acute pain, costiveness, distension of the umbilical region, flatulency, eructations, nausea, vomiting, at first bilious, afterwards the fæces are discharged by the mouth. These symptoms arise from an intususceptio intestinorum. *

BLEEDING AND BLISTERING.

The symptoms of inflammation are to be removed by the methods already proposed.

PURGATIVES.

Gentle purgatives are frequently ineffectual.

R. Vin. aloetic. alcalin.
Aq. cinnamom. ten. aa. unc. 1.
Tinct. rhei dr. 2. M.
F. haust.

Crude mercury is frequently recommended, which is supposed to act from its gravity.

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* Inversion of the intestines, like a glove turned inside out.

℞. Sal cathart. amar. unc. 1. ss. solve in
Aq. fervent. unc. 12. dos. coch. 2.
Omni horâ donec solvatur alvus.

The following should be given along with the purgative.

℞. Ol. amygdal. unc. 1.
Tinct. thebaic. gutt. 30.
Ol. anisi q. v. m. f. haust.

INJECTION.

It is frequently necessary to remove costiveness by injecting into the anus the fumes of tobacco, and sometimes the throwing cold water on the body will promote a discharge by stool.

INFLAMMATION OF THE LIVER.

HEPATITIS.

SYMPTOMS.

If the inflammation is in the concave part of the liver, the pain is obtuse, together with a sense of weight in the right hypochondrium; there is heat and anxiety about the præcordia, the pulse is not much quickened.

If the inflammation be in the convex part, the pain is more acute, and the breathing is frequently affected.

This disease, if properly treated, and taken in the beginning is seldom dangerous.

The most favourable termination is by resolution.

BLEEDING AND CUPPING.

This is effected by bleeding, according to the violence of the symptoms, either general or topical, and the external application of blisters.

PURGATIVES, GLYSTERS, AND FOMENTATIONS.

The belly is to be kept open by antiphlogistic purgatives, or emollient glysters; fomentations may be employed.

WHEN BARK AND VIRTIOL ARE TO BE USED.

If suppuration should come on it is dangerous, but sometimes the matter points outwardly, the ulcer is healed, and the hectic fever, from the absorption, is either prevented or cured by the bark, to which a few drops of elixir vitrioli may be added.

In a scirrhus of the liver we must have recourse to the internal and external use of hemlock; the expressed juice is the most certain preparation, which at first may be taken in a dose of a tea-spoonful, and gradually increased.

It may be kept during the winter in a cool place, with a little oil, or spirit of wine, on its surface.

DOCTOR SAUNDERS' PRACTICE.

MERCURY.

An opinion has for some time prevailed, that mercury is a specific in *every disease* of *the liver;* and that even in active phlegmonous inflammations it will obviate suppuration. In the *East Indies*, where this complaint is endemic, I am informed, on the best authority, that many judicious and successful practitioners seldom administer mercury until the violence of the inflammatory action has been moderated by bleeding, active purging, and the antiphlogistic plan of treatment. Then it is that mercury is employed to the greatest advantage. But it appears, on attentive observation, that the transition of active inflammation into a state of resolution is not immediately followed by a healthy condition of the part, but it remains for a time debilitated and disposed to lapse in a chronic state. This will probably be found the proper period for the exhibition of mercury, which acts as a spur on the vascular system of this organ, and by its moderately stimulating effects, occasions a degree of action, which, when protracted to a proper length, terminates in health. But the disposition of hepatitis to terminate in a scirrhous and diseased structure, either of the whole, or of a part of the liver, is so strong in some cases, as not to be resisted by a moderate mercurial action. Here we are to take the advantage of its more active operations; and, instead of inducing a slight change on the pulse, with only a tenderness of the mouth, we ought to extend its effects to the production of a gentle salivation, which, when continued for a length of time, generally effects a cure.

INFLAMMATION OF THE KIDNEY.

NEPHRITIS.

It is attended with a sense of heat and an acute pain in the region of the kidney, strangury, vomiting, and numbness in the thigh of the affected side.

It should be distinguished from a colic.

It may arise from the general causes of inflammation, from the acrimony of urine, or the presence of calculi.

The resolution of the inflammation is to be attempted by bleeding, the external application of blisters, fomentations, emollient glysters, and the drinking large quantities of barley water, and the mucilage of gum Arabic.

If there is little fever opiates may on some occasions be employed to abate the pain; the warm bath is frequently proper, and both will promote the passage of stones through the ureters.

R. Aquæ hordeat. lb. 2.
G. Arabic. unc. 1.
Coq. parum et cola pro potu commun.

R. Ol. amygdal. unc. 1.
G. Arabic. dr. 1.
Syrup. balsamic. unc. ss. diu tritis, adde
Aq. menth. vulg. simpl. unc. 8. f. mistura
Cap. cochl. 1. vel 2. omni hora.

R. Elixir. paregoric. dr. 1.
Aq. hordeat. unc. m. f. haust.

If a suppuration comes on, the bark is to be had recourse to, with a milk diet, and every thing irritating is to be avoided.

Easy stools are to be acquired by

R. Mannæ unc. ss. solve in
Aq. fontan. unc. 4. adde
Ol. amygd. unc. ss. m. f. haust.
Sextâ quâque horâ sumend.

The inflammation of the bladder, or the uterus, is to be treated in the same way.

STRANGURY.

A Strangury is attended with a considerable pain in making urine, which is discharged in small quantities at a time, with a violent tenesmus, and most frequently arises from an inflammation in the neck of the bladder, or an abrasion of the mucus, which defends the bladder from the acrimony of the urine, and more especially from the absorption of cantharides.

The drinking of emulsions of almonds with camphor and nitre are proper, or linseed-tea with Gum Arabic in it.

RHEUMATISM.

RHEUMATISMUS.

TWO KINDS.

It is divided into the acute and chronic.

THE ACUTE.

In the former the pains are attended with a considerable degree of fever; in the latter there is none.

The joints, the wrists and knees more especially, are affected with pain, attended frequently with inflammation and tumour.

THE ANTIPHLOGISTIC PLAN.

When the fever is of the acute inflammatory kind, bleeding, and the gentle diaphoretic course, are to be employed.

TOPICAL BLEEDINGS.

Topical bleedings, either by leeches or cupping-glasses, after a general bleeding, are frequently useful.

OPIATES.

When the fever is moderate, and pains severe, the following is proper:

℞. Extract. thebaic. gr. 3.
Pulv. ipecacuan. gr. 4.
Nitri,
Tart. vitriol aa. gr. 8.
Syrup. croci q. s. f. bolus.

BLISTERS.

When the pains are attended with no fever, and more especially if they are confined to a particular part, blisters are to be applied, which are to be healed up as soon as possible.

SUDORIFICS.

℞. Aq. fontan. unc. 1ss.
—— alex. spt. dr. 1.
Sal C. C. scr. ss—scr. 1.
Syrup. croci, m. f. haust.
Quartâ vel sextâ quâque hor sumend.

℞. Gum guaiac. scr. 1. solve vit. ovi,
Aq. cinamom. ten.
—— fontan. aa. dr. 6.
Tinct. guaiac. volat. dr. 1.
Syrup. croci, dr. 1 ss. m. f. haust.

℞. Elix. paregoric. dr. 1.
Mist. camphor. unc. 1.
Vin. antimon. dr. 1. m. f. haust.
Quintâ quâque horâ sumend.

WHEN THE BARK MAY BE USED.

If the disease intermits, and on its return is not preceded by any febrile paroxysm, the bark is to be given.

Chronic rheumatism is to be treated with sudorifics, and the bark.

LUMBAGO.

This is to be cured by a calomel purge taken at bed-time.

R. Calomel, gr. 2.

To be worked off the next morning with

R. Rhei pulv. scr. 1. ss.
Kali yitriolat. gr. 15.
Aq. Menth. pip. unc. 2.
Ft. Haust.

A large diachylon plaster, spread over with flowers of sulphur, applied to the loins is found also of great service.

INFLAMMATION OF THE EAR.

OTITIS.

WHAT is called *wax* in the ear, is not, indeed, true wax, for it will dissolve in water; hence it is that tepid water, poured by a spoon into the ear, at night, and kept in by cotton, has dissolved that substance, when indurated, which is a common cause of deafness and otitis.

Tincture of myrrh, in the same way, poured every night into the ear, has removed deafness, by depositing the small resinous particles along the *meatus auditorius*, which heals the ulcer, and defends the part.

Ear-ache sometimes continues many days, without any apparent inflammation, and is then frequently removed by filling the ear with cotton or wool wetted with tincture of opium or æther, or even with warm oil of almonds, or warm water. Sometime a pain in the ear is the consequence of association with a diseased tooth, in which case, the radical cure should be attempted by the removal of the tooth itself.

DOCTOR THORNTON'S PRACTICE.

SORE EARS.

Slight blisters and ulcerations behind the ears of infants are very common, and in general require only to be washed with cold water, or covered with a singed rag, to keep the cap from sticking to them, and thereby giving the child pain. They are, moreover, very often beneficial, especially during bowel complaints, or the irruption of the teeth; and will sometimes get well and break out again into very foul sores, several times, without any cause of alarm. But in children of a gross habit of body, and especially about the time of teething, there is a species of ulcer that often requires attention, on account of its extending low down in the neck, occasioning great pain, and spreading into large and deep sores; insomuch that a gangrene has sometimes come on, and even the processus mastoideus become carious. Here fomentations will be necessary, especially those of bark; and its powder should be administered, internally. Such cases, however, do not very frequently occur; but whenever the sores are large and painful, fomentations of white poppy heads, boiled in milk, will be beneficial. If such ulcers are very foul, the cure should be begun by a blister on the back, in order to draw off the heated serum that flows to the parts. Where the bark has not been indicated, I have usually given an opening powder of testacea and rhubarb, with a little nutmeg, or sometimes nitre, to which is added either calomel, cinnabar of antimony, or hydrargyrus cum sulphure; the latter of which I

think I have found more serviceable in some eruptive complaints in young children, than seems to be imagined; but then it must be administered in much larger doses than it usually is. But above all, if this species of ulcer be not soon disposed to heal, after such treatment, some mercurial application should be made use of, which, though the sores are often apparently inflamed, never offends them. A very clean and elegant preparation of this kind is the following:

R. Calomelan. dr. 1 ad dr. 2.
Ung. Sambuci, unc. 1. m. ft. linimentum.

A little of this liniment, spread on each side of a piece of doubled linen cloth, and applied twice a day, will do more than all the fomentations, or healing ointments, that I have ever seen used; and indeed has always succeeded with me, though I have often been told, that the sores had spread deeper from day to day, under various other applications. From such treatment, I have never found the least ill effects, but children have preserved their health as well as if the sores had kept open; which, when benign, are certainly designed by nature as a preservative from other complaints, especially those of the stomach and bowels.

In grown-up persons I have seen the Ung. Hydr. Nitrat. and Ung. Spermacet. equal parts, applied at bed-time, do great service, and also the following lotion:

R. Zinci Vitriolat, gr. 6.
Aq. Rosæ, unc. 8.
Ft. Lotio bis die utend.

INFLAMMATION OF THE EYE.

OPHTHALMIA.

TWO KINDS OF INFLAMMATION.

The inflammation of the eye may be considered as of two kinds; according as it has its seat in the membranes of the ball of the eye, when I would name it *Ophthalmia Membranarum*; or, as it has its seat in the sebaceous glands placed in the tarsus, or edges of the eyelids, in which case it may be termed *Ophthalmia Tarsi.*

OFTEN COMBINED TOGETHER.

These two kinds are very frequently combined together, as the one may readily excite the other; but they are still to be distinguished according as the one or the other may happen to be the primary affection, and properly, as they often arise from different causes.

CURE OF THE OPHTHALMIA MEMBRANARUM, BY BLEEDINGS.

The *Ophthalmia membranarum* requires the remedies proper for inflammation in general; and, when the deeper seated membranes are affected, *and especially when a pyrexia is pre-*

sent, large general bleedings may be necessary. But this *is seldom the case*; as the *Ophthalmia*, for the most part, is an affection *purely local*, accompanied with little or no pyrexia. General bleedings, therefore, from the arm or foot, have little effect upon it; and the cure is chiefly to be obtained by *topical bleedings*, that is, blood drawn from vessels near the inflamed part; and opening the *jugular vein* or *temporal artery*, may be considered as in some measure of this kind. It is commonly sufficient to apply a number of *leeches** near the eye; and it is *perhaps better still to draw blood from the temples*, by *cupping* and *scarifying*. In many cases, a very effectual remedy is, that of *scarifying* the internal surface of the inferior eyelid†; and more so still, is *cutting* the turgid vessels upon the adnata itself‡.

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* Four to each *temple* may be applied at once, and, when many are employed together, they generally produce a better effect, than if fewer be employed repeatedly: that is, twelve at once are more efficacious than three at a time repeated four times a day.

† These operations require great nicety. For the particular method of performing them, the reader is referred to the writers on this branch of knowledge, who are called oculists.

‡ If the inflammation runs high, so as to endanger vision, by producing an opacity, it will be advisable to make scarifications daily with the edge of a lancet, on the turgid vessels of the adnata itself; which, if done by a steady hand, will be attended with no kind of danger, but, on the contrary, with infinite advantage. Its effects in diminishing inflammation are very great, even though no more than a few drops of blood be obtained, and the relief is frequently so considerable as to induce patients, after once undergoing the operation, to request its repetition.—Vide *Thomas's Modern Practice of Physic.*

PURGING.

Besides blood-letting, purging*, as a remedy suited to inflammation in general, has been considered as peculiarly adapted to inflammations in any of the parts of the head, and therefore to *Ophthalmia*; and it is sometimes useful: but, for the reasons given before with respect to general bleeding, *purging*†, in the case of Ophthalmia, does not

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* Having adopted topical bleeding, we may then order some active purgative to be taken; and this should be repeated every third or fourth day, as long as may be found necessary.

A few grains of hydrargyri submurias, with a sufficient quantity of jalap, or a solution of any of the neutral salts, will best answer the intention.—Vide *Thomas's Practice.*

Such is the practice of the most experienced oculists.

† The mild acute ophthalmy is in general easily cured by means of low diet, gentle purging, by giving small repeated doses of the antimonium tartarizatum, and after making search for any extraneous body that may have insinuated itself beneath the eyelid, repeatedly washing the eye with a warm decoction of mallow leaves, and covering it with any very soft emollient poultice, included in appropriate little bags of exceedingly fine muslin. The fluid remedy may be most conveniently applied by means of an eye-glass. Scarpa orders the antimonium tartarizatum to be taken as follows:

R. Antim. tart. gr. 1.
Decocti Hordei, lb. 1ss.
Crystall. tart. dr. 1.
Sacchari Purif. dr. 6. Misce.

To be taken in divided doses every day.

I have substituted the barley-water for the decoction of dog-grass, which is certainly not essential. The head during this period should be

prove useful in any degree in proportion to the evacuation excited.

BLISTERING.

For relaxing the spasm in the part, and taking off the de-

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frequently held over the steam of warm water, which alone often cures the mildest cases. With this treatment, the inflammatory stage of the mild acute ophthalmy, commonly ceases in the course of four or five days. The patient no longer complains of that oppressive sense of heat, tension, throbbing, &c. experienced at first, and he can now bear a moderate light, without such an effusion of tears as was previously occasioned. In this state, how red soever the tunica conjunctiva may appear, it is no longer affected with acute inflammation, and the ophthalmy has relapsed, from its acute stage, into that attended with relaxation and weakness of the vessels of the conjunctiva, and membranous lining of the eyelids. Emollients are now improper; in lieu of them, astringent, corroborant collyria should be used, by means of which the relaxed vessels of the conjunctiva and eyelid will recover their original tone, and the ophthalmy be totally removed. One of the following eye-waters, which are similar in quality to those directed by Scarpa, may be employed:

R. Zinci Vitriolati, gr. 5.
Aquæ Rosæ, unc. 4. Misce.

Or,

R. Cerussæ Acetat. gr. 8.
Aquæ Fæniculi, unc. 6.
Spiritus Vini Camphorati gutt. 10. Misce.

The mild ophthalmy, originating from causes which render it an epidemic, so quickly passes over the first inflammatory stage, that it is scarcely observable, and is, according to Scarpa, the only case in which warm applications prove beneficial.

termination of the fluids to it, *blistering near the part* has commonly been found useful *.

ELECTRICITY.

Electrical sparks taken from the eye will often suddenly discuss the inflammation of the adnata; but the effect is seldom permanent, and even a frequent repetition seldom gives an entire cure.

TOPICAL APPLICATIONS.

Ophthalmia, as an external inflammation, admits of *topical* applications. All those, however, *that increase the heat, and relax the vessels of the part*, prove commonly hurt-

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* When ophthalmia is found not to yield to topical bleeding, duly repeated, purging, fomentations, and the other means which have been pointed out, it will be proper to put a blister at the back of the neck, or behind the ear on the side with the eye which is affected, supposing only one to be diseased, and to promote a proper discharge, it ought to be dressed with some stimulating ointment †. In those cases where the disorder appears to be constitutional, or to be kept up by any acrimonious humour in the habit, issues between the scapulæ, or the insertion of a seton in the neck, will be advisable.

When the ophthalmy has been very violent, and resisted the common method, Mr. Ware adds, that the most beneficial effects have also been sometimes produced by the application of a blister large enough to cover the whole head.

† Cerat. Resinæ, unc. 1.
Unguent. Lyttæ, dr. 3. M.
ft. Unguentum.

Vel

R. Unguent. Sabinæ.

ful *; and the admission of *cool air* to the eye, the proper application of *cold water* immediately to the ball of the eye, and the application of various *cooling* and *astringent* medicines, which at the same time do not produce much irritation, prove generally useful †: even *spirituous liquors*, employed in *moderate quantity*, have often been of service ‡.

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* When the ophthalmy is accompanied with a violent pain in the head, Mr. Ware recommends a strong decoction of poppy-heads to be applied as a warm fomentation.

† There is nothing so grateful to the eyes as the application of cold rose-water. This is best done, by ordering two cups, into which the rose-water is put, and the rags dipped. When these grow dry, and hot, they are dipped in the rose-water, and suffered to remain till cool, and are then applied again. This must be repeated almost constantly.

The best lotion is that made of ten grains of vitriolated zinc, to six ounces of rose-water, to be frequently used, by means of a glass, some getting into the eye.

‡ As a teaspoonful of brandy to a wine-glass of water, for a collyrium to be used three times a day.

The tinctura thebaica of the old London Dispensatory proves a most efficacious remedy for the second stage of ophthalmy, connected with weak vascular action in the part affected. Two or three drops may be insinuated, between the eyelids and globe of the eye, twice a-day, in common cases; but in others, attended with more sensibility, once will at first be sufficient. Mr. Ware, who brought this application into repute, has found that introducing two or three drops of this medicine at the inner canthus, and making them glide gradually over the eye, by gently drawing down the lower eyelid, proves equally beneficial, and less painful than dropping them at once on the eyeball. Immediately the application is made, it commonly creates a copious flow of tears; a smarting pain, and a sense of heat in the eyes; which inconveniences, however, soon cease, and the eyes become clearer, and feel evidently improved. But notwithstanding every exaggerated assertion, unbiassed

AVOIDING OF LIGHT.

In the cure of Ophthalmia, much care is requisite to avoid all irritation, particularly that of *light*; and the *only safe* and *certain means* of *doing this* is by *confining the patient to a very dark chamber* *.

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surgeons are now quite convinced, that the tinctura thebaica is only a proper application, when the inflammatory action has been previously diminished by blood-letting, aperient medicines, and blisters, and when the action of the vessels has been weakened by the continuance of the disease. Mr. Ware, in recommending it, as a most effectual application, in every species and stage of the disorder, from the most mild and recent, to the most obstinate and inveterate, has certainly been rather too zealous. Scarpa has seen the necessity of limiting the use of the remedy in question, and he has expressly pointed out, that it is only useful when the violence of the pain, and the aversion to light, have abated. Indeed Mr. Ware himself has acknowledged, a little before sanctioning its unlimited employment in all cases, that, in certain instances, in which the complaint is generally recent, the eyes appear shining and glossy, and feel exquisite pain from the rays of light, no relief at all was obtained.

* The shades employed confine the warm air of expiration, and increases the malady greatly. But whenever the patient can easily bear a moderate degree of light, all coverings should be removed from the eyes, except a shade of green silk. A brighter light should be gradually admitted every day into his chamber, so that he may become habituated, as soon as possible, to the open day-light. Nothing has a greater tendency to keep up and increase the morbid irritability of the eyes, than keeping them unnecessarily long in a dark situation, or covered with compresses and bandages.

Cold poultices of rasped raw potatoes, or turnips, are sometimes very efficacious. They may be applied in a fine muslin bag, and ought to be renewed whenever they grow warm.

CURE OF THE OPHTHALMIA TARSI.

These are the remedies of the *Ophthalmia membranarum*; and, in the *Ophthalmia tarsi*, so far as it is produced by the *Ophthalmia membranarum*, the same remedies may be necessary *. As, however, the *Ophthalmia tarsi* may often depend upon an *acrimony* deposited in the *sebaceous glands* of the part, so it may require various *internal* remedies, *according to the nature of the acrimony in fault*; for which I must refer to the consideration of *scrophula*, *syphilis*, or other diseases with which *this Ophthalmia* may be connected †: and, when the nature of the acrimony is not ascertained, certain remedies, more generally adapted to the evacuation of acrimony, such, for instance, as some of the preparations of *mercury*, may be employed.

REMEDIES TO BE USED.

In the *Ophthalmia tarsi*, it almost constantly happens that some *ulcerations* are formed on the *tarsus*. These require the application of *mercury* or *copper*, either of which may by itself *sometimes entirely cure the affection*; and these may

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* We have generally found that, when the inflammation of the eye itself was produced by the disease of the lids (the Ophthalmia Tarsi) that this first has been cured readily by using of leeches, when the citron ointment has been used at the same time.

† Except in venereal cases, we have not found this disease as depending upon acrimony, and therefore, in every instance, easily cured by the citron ointment (ung. hydr. nitrat.).

even be useful *when the disease depends upon a fault of the whole system* *.

GLUING OF THE EYELIDS TO BE PREVENTED.

Both in the *Ophthalmia membranarum*, and in the *Ophthalmia tarsi*, it is necessary to obviate that *gluing* or *sticking together* of the *eyelids* which commonly happens in sleep; and this may be done by insinuating a little of any *mild unctuous medicine*, of some tenacity, between the eyelids, before the patient shall go to sleep †.

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* The *Unguentum Citrinum*, since styled *Unguentum Hydrargyri nitrati*, and, last of all, *Unguent. Hydrargyr. Nitrico-Oxydi*, is, of all compositions, the most certain to cure this disease. It must be heated before a candle, and a camel's hair pencil dipped in it, and the inner part of the eyelids, just under the eyelashes, smeared with this, sometimes the under ridge, sometimes the upper, by gently pulling this part up or down, as required. A copious humour will flow, and this will diminish each day, until the disorder be cured. Bark or steel wine should be given at the same time, as it is a disease of debility.

† Hog's lard answers this intention very well, or the unguentum spermatis ceti of the London Pharmacopœia. The eyes should be, however, well washed each morning with warm milk and water.

CONCLUSION.

HAVING now finished with the mode of treating cases of *inflammatory* disease, we would exhort the patient to an early application to the medical practitioner, and to the practitioner an energetic practice suited to the occasion.—Times may also occur, when the practitioner is out, and then surely such knowledge is of the utmost importance, as should the pilot fall overboard, it would be right to call to the helm the most skilful person, even though devoid of much practice.—It is certain, also, that there are some diseases, which especially afflict the young and the poor, which every one may study, and here popular instructions may prove a great national benefit.

If we also consider the situation of any physician of genius, brought forward and supported in his profession under the honourable patronage of those who are judges of that genius; and that of another destitute of such assistance, and compelled by necessity to attend to the prejudices, and to humour the caprices of the ignorant and impertinent intruders into his office; how pleasant, how creditable is the one! How humiliating the other, to every man of spirit and sensibility!

I have thus endeavoured to shew that, by laying medicine open, and encouraging men of science and abilities, who do not belong to the profession, to study it, the interests of humanity would be promoted, the science would be advanced, its dignity more effectually supported, and success more certainly secured to each physician in proportion to his real merit.

Before I conclude, I cannot help observing, that such objections as are made against any person pretending to judge of medical subjects, who has not been regularly bred to the profession, were formerly urged against the reformers from popery. Besides the divine authority claimed by the church, it was said, that a set of men, who devoted their whole time and studies to so deep and complicated a subject as theology, were the only proper judges of whatever belonged to it; that calling their authority in question was hurting the cause of religion, and lowering the sacerdotal character. Yet experience has shewn, that since the laity have asserted their right of inquiry into these subjects, Theology, considered as a science, has been improved; the real interests of religion have been promoted; and the clergy have become a more learned, a more useful, and even a more respectable body of men, than they ever were in the days of their greatest power and splendour; so it is with Medicine.

THE END.

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